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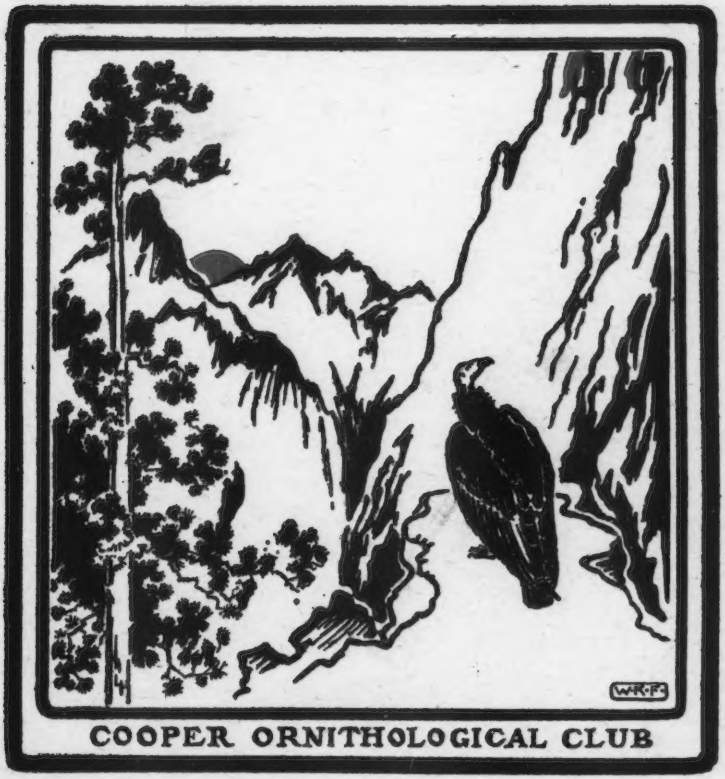
THE CONDOR

A Magazine of Western Ornithology

Volume XXV March-April, 1923 Number 2



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Issued April 3, 1923

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Fig. 14. TYPICAL NEST OF THE FULVOUS TREE-DUCK.

THE CONDOR

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Volume XXV **March-April, 1923** **Number 2**

[Issued April 3, 1923]

THE FULVOUS TREE-DUCKS OF BUENA VISTA LAKE

By DONALD R. DICKEY and A. J. VAN ROSSEM

WITH SIX PHOTOGRAPHS BY THE AUTHORS

IN VIEW of the varying accounts of the breeding and behavior of the Fulvous Tree-duck (*Dendrocygna bicolor*), the data we have gathered during recent field seasons may possibly be of interest to CONDOR readers. The fact that all the following notes were made at Buena Vista Lake, Kern County, California, must be borne constantly in mind, for these birds are so erratic that field work in a different locality might result in findings not entirely consistent with those recorded here. In Tulare County, for instance, the junior author found the species nesting much earlier in 1919, and frequenting an entirely different type of marshland.

One very important factor which must be taken into consideration in any study of conditions at Buena Vista Lake is the variable water level. In former years this lake maintained a much more stable depth than it does today, for it was automatically kept full, or nearly so, by the flow of the Kern River. The increased practice of irrigation, however, has diverted more and more of the water, until now the lake receives only the surplus of the flood season when the melting Sierra snows deliver more water than can be handled by the present canal system. This excess is turned into the lake, which then becomes a broad shallow reservoir, approximately eight miles east and west, by six miles north and south. After the flood season is past and the river no longer furnishes the requisite increment, this shallow storage basin is drawn upon as needed, until by the next spring there remains only a small pond of alkaline water surrounded by a wide expanse of mud. Conditions vary from year to year, depending upon the rainfall; but one can easily conceive of what normally happens to such duck nests as are built before the high water mark is reached. The flood usually starts about May 1, and continues steadily until the first week of July, resulting in an average rise of about an inch a day in the level of the lake. Nests which float readily do not suffer to any great extent, but as comparatively few ducks build this type of nest the vast majority are forced to try again and again, with only occasional success.

The resumé of our observations and journal notes concerning the Fulvous Tree-duck can be most conveniently divided into the following subheads.

HABITAT.—In summer, Tree-ducks were found feeding or flying about all parts of the lake where suitable cover afforded protection for resting or feeding birds, but were never seen at any great distance out on the open water, or away from the immediate vicinity of the shore. In 1920 and 1921 they preferred an area of wild timothy which was dotted with tule clumps and flooded to a depth of about six inches with fresh running water. This afforded at once food and nesting sites. In 1922, on the other hand, the lake reached the highest level attained in many years, and completely inundated all of the for-

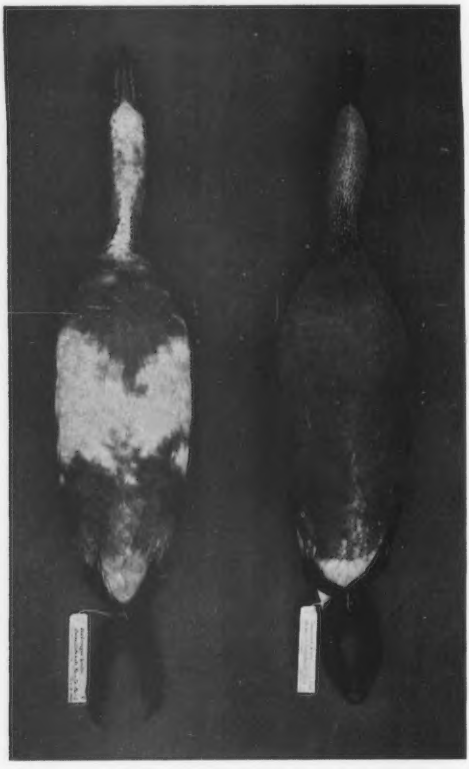

Fig. 15. AN ALBINISTIC SPECIMEN OF *Dendrocygna bicolor*.

mer marshlands. The dense growth of *Polygonum* which covered the lake bed in early May kept pace in its growth with the rise of water, and finally resulted in dense and often impenetrable cover. In this tangle the Tree-ducks found a secure retreat during the summer and early fall.

BEHAVIOR.—With the possible exception of the Coot, it would be difficult to conceive of a more sociable water bird than the Tree-duck. Even at the peak of the laying season in late June, the great majority of birds were continually gathering into small groups of two or more mated pairs. These groups

broke up in the early morning during the laying hour, but assembled again by noon to feed and rest together. Throughout the laying season, the male was in almost constant attendance upon his mate, or at least in her near vicinity. When a single bird was flushed, it would be joined almost immediately by its mate, and both would then circle the intruder at forty or fifty yards, keeping up a constant whistling. There were in addition to the small groups of mated birds several much larger flocks, which were probably composed of unmated birds and non-breeders. Two females which were shot from such flocks on June 2 and July 17, 1921, showed but little trace of breeding activity, and were very fat, whereas all obviously breeding males and females were noticeably thin. Such flocks, when flushed, were very apt to leave the locality at once, in marked contrast to the action of the smaller mated groups and pairs. These non-breeding flocks gradually diminished in size, reaching a minimum about the 10th of July. After that date, their ranks were again augmented by large numbers of birds which had probably become discouraged by the continual flooding of their nests and had given up nesting operations for the season. When going through the combined breeding and feeding ground, with ducks rising continually, it was often difficult to decide which had been merely jumped while feeding, and which had flushed from nests, but by carefully marking the spot and noting the subsequent actions of each bird flushed, one soon became quite proficient in finding nests. Notwithstanding the marked anxiety displayed by the parents when once they are in the air, they are conspicuously shy on the nest, usually flushing at about forty or fifty yards. One bird, however, proved a distinct exception to this rule of behavior. Despite the very exposed situation of the nest, this individual stuck tenaciously to its clutch of twenty-three heavily incubated eggs, and permitted close approach on many occasions.

In 1921, wild timothy probably formed the bulk of the birds' food supply during the summer months, as shown by the examination of several stomachs. In 1922, however, the most available foodstuff during the late summer and fall was the seed from several varieties of *Polygonum*. In getting at these foods, the birds usually settled in a small open space and pulled the heads down one by one, instead of flattening out a feeding area by dropping on the grain itself.

While the species is largely diurnal, there is unquestionably a certain amount of activity after dark. Very often in the early evening just after dusk, large bands of Tree-ducks could be heard flying about, all whistling and squealing at top pitch. Such flocks can be heard for some distance and their route followed by the characteristic and unmistakable notes which are given almost continuously in flight. This whistle is not too easy to describe, although it can be easily imitated. The native Salvadorean name for the Black-bellied Tree-duck is *Pi-shi-shi*, in onomatopœic imitation of its whistle. The double, or rarely triple, note of *Dendrocygna bicolor* is very similar, but differs in being a little more forceful, with a vocal quality which the true whistle of *Dendrocygna autumnalis* lacks. In the call of each species—whether it be of two notes as is usually the case with *bicolor*, or three, as with *autumnalis*—the stress falls always on the second syllable. The note varies a good deal with circumstances, being loudest and most forceful during night flights, and very querulous when the birds are on their nesting or feeding grounds.

The large wing-surface of the species permits of comparatively slow flight on occasion, and a good deal of hovering is indulged in when alighting. But in direct and hurried flight the birds are capable of a very high rate of speed, probably equalling that of the Redhead. They are very curious and decoy readily to even a crude imitation of their whistle, and will often come up from some distance to investigate any unusual occurrence or object.

Tree-ducks are very easily killed not only on account of their usually unhurried flight, but also because of their inability to stand punishment. Most of the specimens taken were shot with a .410 gauge collecting gun at an average range of about forty yards. Their bones are very brittle. For example, the humerus and femur can be easily broken with one's thumb and forefin-

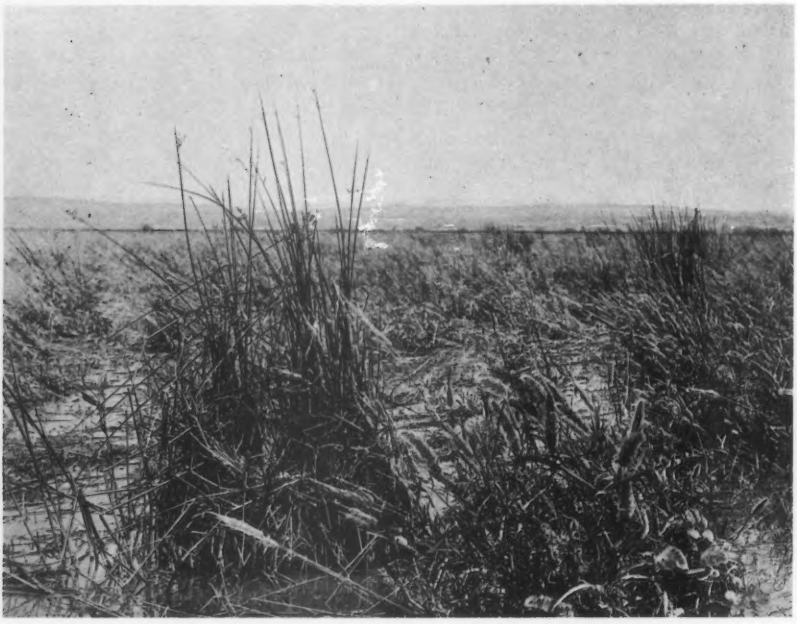

Fig. 16. The Tree-duck nesting grounds at Buena Vista Lake. The site of nest shown in figure 14.

ger; even no. 8 shot at forty yards will fracture these bones. The birds are adept at diving, and even when sorely wounded manage to submerge and burrow under fallen weeds or tule roots. If one can see the exact spot where the bird went down, however, it is usually an easy matter to locate it by feeling with the hands and feet, for it is almost always to be found within ten feet of the place where it submerged.

By the first of September, 1921, all Tree-ducks had left the lake. Most of the water had been drawn off for irrigation purposes by this date, leaving only a shallow alkaline basin, miles from the original shore line, and entirely barren of cover. As such a condition offered no attraction, either in the way of

food or shelter, the birds had left the vicinity. In 1922, however, fall conditions were much more favorable. In this year there was an unwonted persistence of high water, with consequent cover and an abundance of food. By the first of October, therefore, the already numerous summer population was augmented by thousands of new arrivals from less favored localities, and by migrants which found here sufficient inducement temporarily to halt their southern flight. Soon after the first of October, the normal southward migration, added to the opening of the shooting season, rapidly decreased the flocks. Advancing the opening of the season from October 15 to October 1 would therefore seem to be a mistake from the standpoint of the preservation of this interesting southern species within the limits of California, since it resulted in the death of thousands of birds which would in the former course of events have been safely out of reach by the opening day. To make matters worse, there were vastly more birds killed than recovered by the average careless gunner, for on account of their habits and flight routes they usually fell in dense weeds, and so were lost. In fact, it was not unusual to see hunters recover but a single duck out of five or six, and in one case eight, knocked down from a passing flock. At least fifty per cent of the ducks killed between October 1 and October 10 were of this species. After that the proportion declined rapidly, and by October 15 the great majority had disappeared, only three or four Tree-ducks being included in the average "limit" bag on that date. On October 16, the total birds to be seen about the lake did not exceed two hundred individuals. On October 22, there was a decided increase, possibly due to the influx of a new migration wave, but the effect was only temporary.

On December 2, the authors revisited the lake, and while they did not themselves see any Tree-ducks, two birds were brought in by another hunter who reported having shot them from such a considerable flock as to suggest that a few healthy birds had remained until this date. From December 29, 1922, to January 1, 1923, van Rossem again watched conditions at the lake, but at this time careful observation failed to locate even a single bird, nor had any been brought in by the hunters for over two weeks. It is probable that a certain number of wounded birds will be present all winter, because of their inability to join the southward flight while the migration stimulus was still in force. Anyone noting Tree-ducks in California at extremely late dates should therefore take this factor into account as the probable cause of these mid-winter records.

NESTING.—With a single exception, all 1921 nests were placed in tufts of a dwarf species of tule (*Scirpus* sp.). Situations which would often have afforded much better cover, such as close-growing patches of knotweed (*Polygonum*), thick stands of timothy, or dense weed-clumps, were absolutely ignored. The one exception was a nest located in the center of a clump of another species of larger tule, which is also common about the lake. This nest was a flimsy platform probably started by a Ruddy Duck or Coot and never finished. In the construction of a typical nest, spears in the center of a tule clump would be pulled down, and on the resulting platform, a few square inches in area, the first egg would be laid. This beginning was elaborated day by day to accomodate the growing clutch. By the time the set was complete, the finished nest consisted of a compactly matted and well-cupped bed

of stems, usually interspersed with a small amount of fine weed or grass stems, and lined with stray bits of down and feathers. Sometimes tule stems alone were used. The other extreme was a rather exposed nest built almost entirely of weeds and grass and placed in the center of a tuft of a few score scattered stalks. Occasionally definite arching or partial doming of the nest was to be observed, after the fashion of the meadowlarks and the Oven-bird. The bits of down usually found in a nest containing a hard-set clutch were probably dropped during the normal course of preening while on the nest, for contour feathers were not uncommon at such times. This casual—one might well say purely accidental—use of down in the nests of *bicolor* is in interesting contrast to the profuse employment of down in the nesting holes of its more tropical congener, *autumnalis*. In Salvador the junior author found the

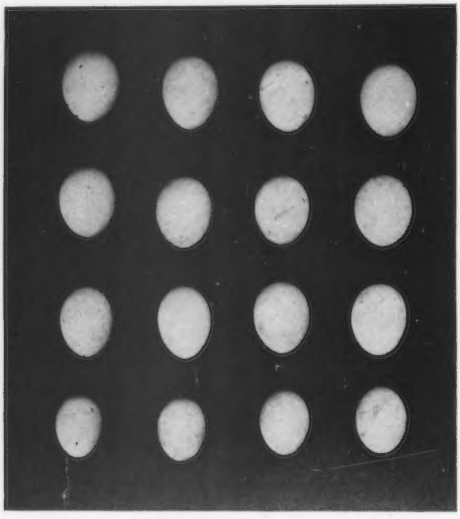

Fig. 17. SIXTEEN EGGS FROM ONE NEST OF THE FULVOUS TREE-DUCK, SHOWING VARIATION IN SIZE AND SHAPE.

hollow-tree nesting sites of the latter species lined with a densely packed mattress of down and feathers in every instance that came to his attention.

The matter of colonization may be accounted for either by the social and gregarious instinct of the species, or by the strict limitation of the area in which grew the dwarf tules of their preference. Probably both factors entered in. Whatever the reason, some fifty nests were found in 1921 on an area about one half mile long by two hundred yards wide, and there were undoubtedly many more which escaped detection. This does not mean that any such aggregation of nests was present at any one time, for observation covered the period between June 1 and July 15. Nor were all sets by any means complete. Many were deserted for no apparent reason, while others were flooded out by the rising water. Several sites were classed as nests only out of deference

to the fact that eggs had been deposited there, for in some cases the eggs had been dropped so casually and rolled together so carelessly as to suggest a chipmunk's storehouse rather than a premeditated set. Such eggs we believe would never have been incubated. The "set" of twenty-nine mentioned farther on was in a cleft in a tule tuft so narrow that the eggs were in several layers, and a touch sent some into the water to join the half-dozen already there. One nest found on July 5 held one egg each of the Ruddy Duck, Pintail, and Fulvous Tree-duck; another nest on the same date held two eggs of the Ruddy and two of the Fulvous Tree-duck. On July 13, two more Tree-duck eggs had been added to each nest, but there were no more additions on July 15, our last day in the field during the nesting season of 1921. This shifting of maternal cares might arise from any one of several causes; probably all of those mentioned here have some bearing at one time or another. The destruction of her own nest before the set was complete might cause the homeless bird to lay the remaining eggs wherever she could find unguarded nests. Another possibility is that there is a streak of parasitism in the Dendrocygnan make-up, a tendency which would be stimulated by the destruction of the original home. In the case of unmated but laying females this trait would be still more apt to crop out. Least probable of all is that forgetfulness of the exact spot where her own nest is placed leads her to deposit her egg in another nest close by. Circumstances occasionally made this last hypothesis seem possible, despite the lack of analogy in other species.

The summer of 1922 was a year of abnormally high water. The nesting grounds of the previous year were flooded to a depth of five feet, so that not a single tuft of the small tule was to be found. The result was a complete reversal of the colonizing rule of former years. Nests were generally isolated and placed in all sorts of locations. Because of the great area covered by weeds, it was difficult to find many nests; most of those encountered were simply stumbled on, more or less accidentally. In this year, nests were found in dense clumps of the larger tule, both green and dead; in knotweed, and even built of floating material in open water, with absolutely no concealment! In all cases they were made of whatever material was close at hand. In other words, if a nest was situated in or on a raft of dead tules, it was sure to be made of brown tule stems; if in a clump of knotweed, then knotweed was used almost exclusively, although often in the latter case a light lining of dryer material such as grass stems was added.

The average number of eggs laid by a single female is a difficult problem to determine; however, ten to sixteen will serve as an approximate average. Most of the nests to which eggs were added at the normal rate of one a day fell between these figures. The larger sets are usually open to suspicion. On June 11, 1922, a Tree-duck's nest was found in a very exposed site on a half-submerged tule raft through which a few green spears of new growth protruded. At that time it contained two eggs. One egg a day was added until there were six on June 15. By 9 A. M. of June 16, four more had been laid! The next day saw three additions; the next day two, one of them being a runt; with one addition for each of the two following days. Thus in a "set" of seventeen eggs there were at the very least six "parasitic" eggs. When this set was blown, seven of the eggs, including the runt, proved to be infertile, while the other ten showed progressive incubation. This may have been pure coin-

Fig. 18. An extreme example of the exposed type of nest.

cidence—it very probably was—but it at least suggests the possibility that the many foreign eggs one finds are the infertile product of unmated females. There was of course no way by which to distinguish the eggs laid by the owner from those foisted upon her by uninvited guests; for the individual variation even among eggs presumably laid by the same bird is very great (see fig. 17).

Another community nest had a still more varied history. On July 6, a set of twelve heavily incubated Tree-duck eggs was taken from a rather massive and well-built nest which was placed in a strip of tules beside the outlet canal. The next day this nest was found in a torn and dishevelled state, exposing a single ancient Redhead egg which had probably been covered in the nest when the Tree-duck took possession. On July 20, this nest was again examined, and was found to contain two very old and very rotten Redhead eggs, two Tree-duck eggs which had been laid about a week, and four fresh eggs of the Ruddy Duck.

The largest set encountered was taken on July 5, 1921. It contained twenty-nine eggs, which ranged from fresh to a trace of incubation. Two eggs were certainly infertile, and doubtless many more would have proved so had any real test been made. The eggs in this set were in three layers—thus making a mass of eggs nearly as deep as the nest was wide. When over fifteen or sixteen eggs are laid, they are pretty sure to be piled two deep in spots, but unless an exceptionally large number of eggs is to be covered, they are brooded in a single layer. The earliest date on which eggs were found was June 1, 1921, incubation in the sixteen eggs varying from fresh to one-third. Much the latest set was found on August 12, 1922; it contained eight eggs which were nearly ready to hatch. A female taken August 13 was in full breeding condition and contained an egg with shell partly formed. This may indicate a still later nesting, but the probability is that she was merely dropping eggs and had no nest.

The period of incubation is twenty-five days. In most of the sets which were collected and prepared, the incubation was found to be progressive, that is, it varied from fresh to about one-third, or even one-half, depending upon the number of eggs, thus showing that the young must hatch in the order in which the eggs are laid. In other sets it was absolutely uniform, so that no rule in this regard can be laid down. A possible explanation of the progressive cases is that the sun heat initiates development in some eggs as soon as they are laid. The local temperature in midsummer runs from 100° to 115° in the middle of the day, and there is not sufficient change at night to seriously chill the eggs. Moreover, the eggs of this species display remarkable vitality and persist in developing under even the most adverse conditions, as the following instance will show. Nine fresh eggs from incomplete sets in flooded nests were put under a domestic hen. These eggs had been under water for periods ranging from one to three days! Despite this unpropitious start, one of the eggs hatched in twenty-five days. The other eight were broken for examination on the twenty-seventh day. In three cases, the young were found to have died in the shell when on the point of hatching, while the other five were addled. This vital embryonic persistence in the face of adversity seems truly remarkable.

PLUMAGES.—The natal down of the Fulvous Tree-duck seems to be so little known that we deem it advisable to describe in detail the two twenty-four-

hour-old chicks in our collection which represent that stage. The color terms employed are from Ridgway's Color Standards and Nomenclature (1912).

Number J 862, ♂, newly hatched young, Buena Vista Lake, Kern County, California; June 25, 1921. Whole top of head, including lores and space below eye, uniform dark mouse gray. Hind neck, sub-auricular streak extending from hind neck to beneath

Fig. 19. An example of domed architecture.

posterior portion of eye, and entire upper parts, including sides of body and outer surface of wings, uniform mouse gray (intermediate between mouse gray and deep mouse gray). Supraloral spot, ring around head separating crown from hind neck, lower face, chin, throat, sides of neck, under sides of wings, and entire under parts, white—pure on chin and tinged with mouse gray across pectoral and posterior regions. Upper man-

dible dark plumbeous, nail clay color, lower mandible (dry) maize yellow, legs and feet (dry) deep neutral gray, claws (dry) clay color. The lines of demarcation between white and gray areas are sharpest on head and most indistinct on body areas.

Number J 889, sex ?, newly hatched young, Buena Vista Lake, Kern County, California, July 4, 1921. Differs from the foregoing in having a partially concealed white spot on each side of back near the bases of the wings, exactly paralleling the similar spots seen in almost all young ducks of the same age. It will be noted that in this feature this specimen differs from the description given by Grinnell, Bryant, and Storer in *The Game Birds of California*, pp. 246 and 250, showing that at least a strong indication of this character is sometimes present. It will also be noted that in both our birds there is a strong pectoral wash.

As the young develop, the head markings soon become obscure and the gray areas muddy, taking on a decided brownish tinge. A one-third-grown bird is just assuming the juvenal plumage. This appears first on each side of the back at the bases of the wings, and simultaneously across the pectoral region, along the anterior portion of the flanks, and on sides of the face.

The complete juvenal plumage is similar to that of the adults, but is of very much looser texture, and the feathers are decidedly narrower and longer. In color it differs as follows: Everywhere paler; the blacks less pure, and strongly tinged with brown; the white areas on the feathers of the flanks, rump, and neck usually duller, or suffused with buffy; brown tipping on the back and scapulars duller, with the line of demarcation indistinct or sometimes lacking altogether. The chestnut on the wing coverts seems to be purely an individual character, although averaging brighter in adult birds. It may be very pronounced or almost lacking, irrespective of age or sex. A good mark of immaturity is the shape of the bill. The lateral outline of the juvenal culmen is nearly straight, with practically none of the concavity so pronounced in mature birds.

The first fall, or immature, plumage is attained about the middle of October, and so far as observed is identical with that of fresh fall adults, save that the brown tipping on the back is usually a shade darker in the young birds. The entire juvenal plumage including the rectrices is shed, save only for the flight feathers of the wings, which are probably retained until the next fall. Most of the birds of the year are on the way south before this moult is complete, and the majority of juveniles examined during the first two weeks in October had only a sprinkling of new feathers. Toward the latter part of this time, however, enough evidence had been gathered to establish a complete moult, with the one exception of the wing feathers, as noted above.

The moult of the adult occurs somewhat earlier and is complete in most birds by the first week in October. During the period when the primaries are being shed it seems impossible to obtain specimens, for the birds then keep to the dense weed cover, and escape by diving or hiding, in both of which accomplishments they are remarkably adept. The only data secured covering the adult primary moult were gained by examining hundreds of ducks killed by hunters. On October 3, one was found which still had the bases of all flight feathers encased in sheaths, showing that these are acquired simultaneously, as is the case with other ducks.

Among the hundreds of individuals examined and the thousands seen during the three summers spent among them, only one departure from the normal type of coloration was observed. This was a partially albinistic adult fe-

male taken July 12, 1920 (see fig. 15). When captured, it contained a fully formed egg, and was accompanied by a normal male.

There are admittedly many points in the foregoing paper which are imperfectly covered, or have been passed over more or less hurriedly because of lack of data on which to base conclusions. Our personal field work, however, in the locality in which these observations were made is practically completed. There is therefore so little likelihood of our gaining further information on these points for some time to come that it seems best to contribute without further delay the few items we have to add to the life history of this comparatively little known, but unusually interesting duck.

Pasadena, California, January 25, 1923.

WILLIAM WIGHTMAN PRICE

By WALTER K. FISHER[1]

WITH TWO PHOTOGRAPHS

DURING the pioneer decade following the opening of Stanford University, in 1891, an enviable zeal for exploration characterized the institution's activities in the field of zoology. Natural history was appraised at its real worth, and expeditions, prosecuted under both private and governmental auspices, visited various parts of Alaska, Bering Sea and the Arctic Ocean, Lower California, Mexico, Panama, the Galapagos Islands, Hawaiian Islands, Samoa, and Japan. Nearer home, the valleys and mountains from Washington to Arizona were scrutinized, while the new Hopkins Seaside Laboratory on Monterey Bay stimulated and broadened students as no other experience could have done. Men who have now reached middle age were then emerging enthusiastically from their "teens" and were nothing loath for a spice of action to mix with the pabulum of learning. They approached biology as it should be approached—with a healthy curiosity, through the door of natural history—and grew to be ecologists without the damper of jargon and dogma.

William Wightman Price was one of these men. Doubtless the younger generation of ornithologists know few of that coterie[2] of explorers except by hearsay, an occasional record, or a museum label. In the course of time some

[1]The writer wishes to acknowledge, with thanks, aid rendered in the preparation of this article by Mrs. Bertha de Laguna Price, Mr. Robert M. Price, Dr. Ray Lyman Wilbur, Mr. Dane Coolidge, Dr. O. L. Elliott, and Professor J. O. Snyder.

[2]Among the students most interested in field work of various kinds were the following: J. F. Abbott, Malcolm Anderson, W. F. Allen, Norman Buxton, John Colliver, Dane Coolidge, G. B. Culver, R. W. Doane, Marion Dole, W. K. Fisher, Joseph Grinnell, Arthur Greeley, Flora Hartley (Mrs. C. W. Greene), Lou Henry (Mrs. Herbert Hoover), Edmund Heller, Dora Moody (Mrs. T. M. Williams), A. G. Maddren, R. C. McGregor, Chester McGee, W. H. Osgood, K. Otaki, C. J. Pierson, W. W. Price, Cloudsley Rutter, Alvin Seale, Elsie Shelley (Mrs. Harold Heath), J. O. Snyder, R. E. Snodgrass, Norman Scofield, E. C. Starks, J. M. Stowell, John Van Denburgh, R. L. Wilbur, T. M. Williams. Among the instructors (in the field often rather difficult to identify by current definitions and descriptions of university professors) were Harold Heath and C. W. Greene (as yet with pinfeathers), D. S. Jordan, C. H. Gilbert, O. P. Jenkins, W. W. Thoburn.

have dispersed vocationally, while others, becoming more formally aware of biology, have acquired all the earmarks of irreproachable scientific respectability.

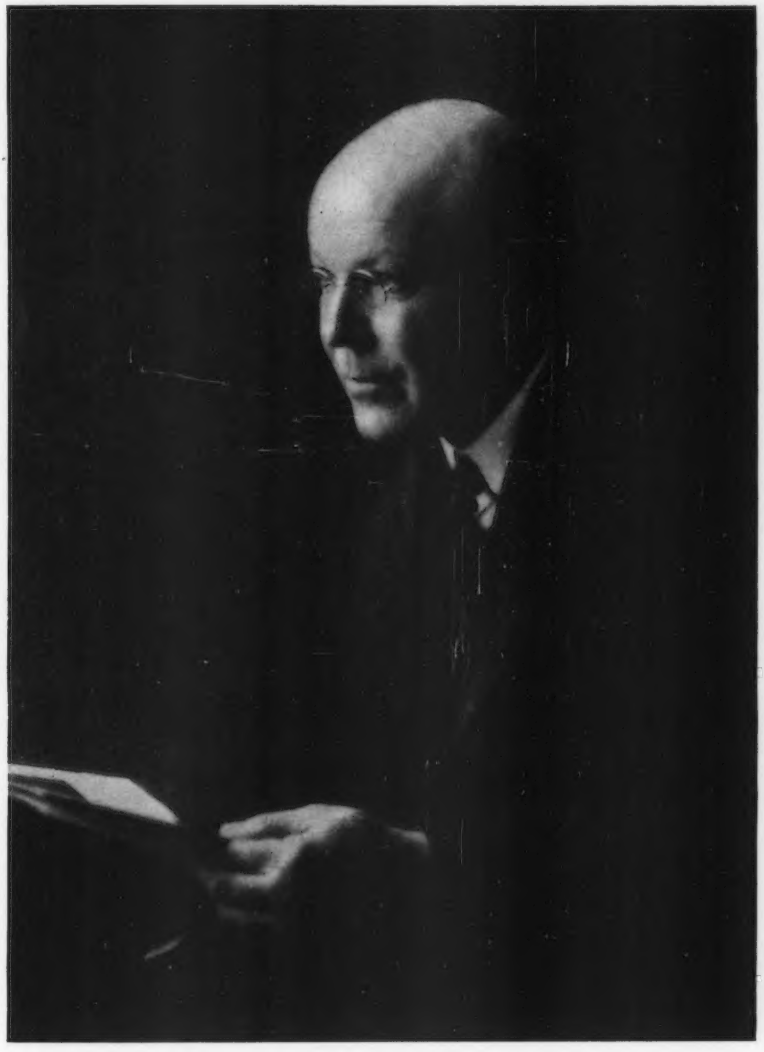

Fig. 20. WILLIAM WIGHTMAN PRICE: 1871-1922.

But in those days W. W. Price was a successful collector of birds and mammals, and established his reputation through expeditions to southern Arizona and the Sierra Nevada Mountains.

I encountered "Billy" Price for the first time toward the close of his collecting career, in 1897, when as a freshman at Stanford I found him on the Quad, unpacking some natural history plunder from the Sierras. He was attired in splendid white trousers and was bubbling over with the enthusiasm and good nature which were his most endearing characteristics. I fancy the trousers were evidence of fraternity communism, enforced by a sudden return to civilization, for in later years he stoutly denied ever having succumbed to such blandishments of society. He had taken his A. B. in Economics at Stanford the previous spring and was then commencing an account of the mammals of California, for which he later received his Master's degree. The restraint and rather exacting routine of the laboratory were not to his liking. He loved field work, and it was only this side of zoology that strongly ap-

Fig. 21. Field party of Stanford students, early in 1895, under leadership of W. W. Price (who stands at extreme left); Malcolm P. Anderson (sitting on ground at left); then W. A. Pritchard (seated); Nello Johnson (standing); Ben Condit (standing); Jacob Diefenbach (the packer, on horseback).

pealed to him. When the strain of confinement became too great he simply disappeared.

Billy Price was an impulsive, emotional, generous, grown-up boy, one of the most likable men I have ever known. He was of those fortunate folk to whom life is a series of absorbing enthusiasms. He loved nature to the point of preoccupation, and his especial delight was the high Sierra Nevada Mountains. Here he spent the best years of his life. Deserts, too, held an especial lure. He revelled in their great expanses, their pungent vegetation, and their evening splendor of purple and gold. They had always been for him new worlds to explore, and had become indelibly painted upon the subconscious background of his life—upon that curious, often dim curtain, before which we

say our lines and play our parts. The deserts and mountains were his mental environment.

Your true nature lover with a strong sentiment for the fitness of things will readily sympathize with Billy's attitude one afternoon when we had stolen away from our responsibilities at Fallen Leaf Lake. To provender of hardtack and bacon, we added a trout or two from one of the small lakes. Billy suddenly confessed a longing for the desert and insisted that only a supperfire of sagebrush would afford the proper "atmosphere" for his mood. So over coals of sagebrush we broiled the bacon and trout, but we walked several miles for the fuel.

Although addicted to mountains and fond of the silent places, Price was nothing of a recluse. He was an unusually good "mixer", and his interest in people led him into all sorts of queer places and to fraternize with very unusual specimens of humanity. His genial, friendly spirit and boyish outlook gave him his hold upon boys and grown-ups alike, an influence which contributed greatly to the success of his school at Alta, Placer County, and his summer camp at Glen Alpine, later at Fallen Leaf Lake, near Tahoe. Most of the friends of his later years knew him not as an ornithologist but as a delightful companion on innumerable hikes and camping trips from his Fallen Leaf resort—a companion with a fine feeling for life and a poetic appreciation of the beautiful.

President Ray Lyman Wilbur was a member of one of Price's most successful expeditions and has written the following recollections of the trip.

I first met W. W. Price during my freshman year at Stanford in 1892-93. He had at that time a reputation as a collector. I was immensely pleased when in the spring he asked me whether I would go with him on a collecting trip to Arizona, which was to be financed by Mr. Timothy Hopkins, one of the original trustees of the University.

We took with us Malcolm Anderson, the young son of Professor Anderson, of the Department of English, who later on made a considerable reputation as a collector in Asia and elsewhere. "Billy," as we knew him, was somewhat casual in making his plans for the trip. We took along plenty of dust shot, which we had a good deal of difficulty in securing, auxiliary barrels for our shotguns, arsenic and skinning tools, canvas and bedding, and a few simple cooking utensils. With all our plunder together, we landed at Third and Townsend streets, San Francisco, on a late May afternoon. Billy skirmished around and finally found an old driver with an express wagon. Loading everything on, we drove up, and went along, lower Folsom street, where at that time there were a considerable number of old, broken-down wooden boarding houses used largely by workmen and sailors. One, that looked promising, was selected for a night's lodging. All of us, including our baggage, were given the former bridal suite on the second floor. The trappings were decidedly grimy and the beds looked suspicious. I remember only two things about this phase of our trip. One was that I slept on the floor, and the other was the enormous bowl of oatmeal that we were given along with the other boarders at breakfast-time.

We took the train in the early morning for Arizona, going in the tourist coach. The trip across the desert east from Los Angeles was very dusty at that time. Such things as a quarter of an inch of dust on the seat of the car in no way disturbed the equanimity of the leader of the party. In Tucson where we arrived in the middle of the night—sleeping then until morning on the floor of the station—we came in contact with the editor of one of the papers, who was interested in birds. On his suggestion and advice we went out to old Fort Lowell, near Tucson, where we remained for some six weeks collecting in the willows along the stream and in the sahuaro forests.

We averaged a half-dozen rattlesnakes a day and saw many Gila monsters. We had to get up early in the morning to be sure to get our traps before the sun brought

about decomposition or before the screw-worm fly infected our specimens. Billy was a first-class collector, but was somewhat noisy in moving about so that he saw many fewer rattlesnakes than did I and he also missed certain kinds of birds which I picked up rather frequently. He was a hard worker and we spent the whole afternoon skinning mammals and birds in the old broken-down adobe buildings of the Fort.

We had many contests as to who was the best shot. These were principally manifested in shooting bats in the evening light as they came out from the old buildings. We made quite a collection in this way.

From Fort Lowell we went to the Huachuca Mountains, where we spent a number of weeks in the upper and lower parts of Ramsey Canyon. We also collected along the San Juan River near Tombstone.

Our food supply was very simple. We lived largely on pancakes, coffee, prunes and game. At one time we were completely cleaned out by some Mexicans, who took everything except our specimens. But we soon managed to get a new outfit. The Anderson boy had to return to California because of malaria apparently acquired along the river. We were joined by a Dr. Timmerman, a dentist, who was with us for a while.

During the three months that we were collecting, we worked all of the time getting specimens and had good results. The collection became the property of Stanford University. As I remember it, we brought in some dozen or thirteen varieties of rattlesnakes, one a new species. The country at that time was full of interesting characters. "Apache Kid" had been loose in the Chiricahuas and we were none too comfortable at times in that portion of the Huachucas that extended over into Mexico. There were a considerable number of soldiers at Fort Huachuca who gave us a considerable sense of comfort.

Price was a delightful companion, very much interested in all forms of animal life, particularly in birds and their nesting habits. His enthusiasm was contagious. I look back with renewed pleasure as my mind goes over the many pleasant incidents of the trip. The great Blue-throated and Rivoli hummingbirds, the Vermilion and Sulphur-bellied fly-catchers, and the various little doves of Arizona were a constant source of pleasure to us both.

Little is known of Price's boyhood. He was the son of Robert Martin and Harriet Wightman Price and was born at Milwaukee, Wisconsin, January 20, 1871. Two years later his mother died, and for several years thereafter he lived with his grandparents, Mr. and Mrs. William Wightman, in West Bend, Wisconsin; a little later and until he was six, he lived in a small village called Young America. The family then moved to St. Edward, Nebraska, a town which had just been started thirty miles north of Columbus. When he was quite a youngster his father offered him a dollar for every swallow he could kill with bow and arrow. The budding Tell bagged about twenty-five before the offer could be withdrawn, with a financial compromise on the original contract. About this time, while the family was away, his experimental proclivities led him to paint his sleeping grandmother's face with ink "to see what she would look like". When seven or eight years old he ran away for several days with a band of Indians in order to see real hunting. At the age of nine he was taken to Riverside, California, and five years later his father died. Price had accumulated a collection of eggs, which he sold, but was given worthless money in exchange. After his father's death, in 1885, and although he was only fourteen, he started for Arizona, where he remained a year and a half, exploring deserts and mountains. On his return he entered the Oakland High School and paid part of his expenses from the sale of bird and mammal skins.

The free and easy outdoor life in Arizona rendered the classroom extremely onerous. He found existence in the pines of the Sierras much more

to his liking and was wont to play hookey for considerable periods. Being a lad of parts, he gained the interest of that splendid woman, Irene Hardy, whose memory so many Californians have reason to cherish with affection. Miss Hardy, who later became Instructor in English at Stanford, was then a teacher in the Oakland High School. Her superb common sense, poise, and sympathy won young Price, and between the two arose a friendship which was to be a determining factor in the boy's life. Hers was the stabilizing influence which carried him through school and college to the degree of Master of Arts in 1899. He was very much a son to her for thirty years.

Price had to keep down rather than keep up his interest in collecting while attending the Oakland High School. For example, in December, 1887, we find him at Dutch Flat, where he remained for several months and studied English by correspondence with Miss Hardy.

During the summer of 1892 he made an extensive collecting trip through the Sierras taking specimens at Colfax, Rocklin, Red Point, Summit, Mt. Tallac, in California, and Carson Valley, in Nevada. It was his first visit to Tahoe, from whose spell he never recovered[3]. On one of the streams flowing into the Middle Fork of the American River, he found the most northern stand of the giant sequoia, a small grove of six trees heretofore unknown to naturalists[4]. On this trip he collected the type of *Thomomys monticola* at Mt. Tallac.

In the autumn of 1892 he entered Stanford University, but was not in attendance until the following year.

In the spring of 1893 he made a short trip with Dr. C. H. Gilbert to Bear Valley, San Benito County, and described one of the wood-rats taken as *Neotoma californica*[5].

During the late spring and summer of that year he conducted to Arizona the expedition concerning which Doctor Wilbur has written; and encouraged by its success he returned to the Huachuca and Chiricahua mountains the following season. This venture ended rather disastrously, for a fire burned all his supplies and the railroad strike of that year prevented his getting more[6].

In the summer of 1895, with Dane Coolidge and Arthur Greeley, he collected in the Sierras, going by way of Mt. Hamilton, the San Joaquin, Ione, Amador grade, Silver Lake (above the American River), and the Pyramid Peak-Mt. Tallac region. Coolidge and Greeley continued into Nevada.

During the following summer Dane Coolidge, Loye Miller and J. F. Abbott collected for him in Lower California. Mr. Coolidge writes that Price was then at San Francisco and Stanford classifying specimens.

In the summer of 1897 Price was at Tahoe, where, the following year, he had his first camp for boys, in Glen Alpine. During late November and December, 1898, he visited the lower Colorado River and the head of the Gulf of California, and contributed to THE CONDOR[7] a list of the birds observed. He very nearly lost his life. He had penetrated into the gulf with some Mexi-

[3]"Notes on a Collection of Mammals from the Sierra Nevada Mountains," Zoe, 4 (1894), p. 315.

[4]"Discovery of a New Grove of Sequoia Gigantea," Zoe, 3 (1892), p. 132.

[5]"Description of a New Wood-rat from the Coast Range of Central California," Proc. Calif. Acad. Sci., ser. 2, 4 (1894), p. 154.

[6]In The Auk for January, 1895, he published one of the results of this trip, "The Nest and Eggs of the Olive Warbler (*Dendroica olivacea*)," p. 17.

[7]"Some Winter Birds of the Lower Colorado Valley," Condor, 1 (1899), p. 89.

cans in a ramshackle craft, and, having become too seasick to think clearly, abandoned the boat and attempted to walk to Yuma. The gulf is here bordered by desolate, saline mud flats, ten to twenty miles wide and forty or fifty miles long, intersected by meandering sloughs. He lost his way, and after wandering far too long—days in fact—without food and with little or no water, finally reached an Indian settlement. The following Christmas saw him back in the same general region with a well-equipped outfit and a party of boys from the Thacher School, where he had become a teacher in the autumn of 1899. At this time he received an offer from the British Museum to make collections in South America. But he had other projects in view, and Perry O. Simons, who was later murdered by a native guide, went in his place.

On June 6, 1900, he was married to Bertha de Laguna (Stanford University, 1894).

The following autumn saw the opening of a school for boys, Agassiz Hall, at Alta, Placer County. Price was well fitted for this work and the venture prospered. In 1909 the school was moved to Auburn and in 1911 was discontinued because the growing business at Tahoe required his entire attention. In the meantime his summer camp at Glen Alpine grew into Camp Agassiz, to which at first only boys, but later grown-ups were admitted. In 1906 this was moved to Fallen Leaf Lake where Price built up the widely known Fallen Leaf Lodge, managed during the past few years by Mrs. Price. The boys' camp became an entirely distinct project, and was subsequently conducted by the present writer until closed, on account of the war, in 1917.

The central idea or aim of both school and camp was to expose boys to an out-of-doors life in the mountains in order to bring out that love of nature which is latent, if not active, in every boy; and to build up self-reliance and initiative by having the boys carry a share of the responsibilities of existence.

Price entered Red Cross work in December, 1917, and served unofficially in the vicinity of Palo Alto with Mr Wheeler. He became officially Assistant Field Director, in January, and had charge of the Red Cross building at the Palo Alto Base Hospital, where he served until after the armistice. It was while engaged in this work, or frequent overwork, that he had his first serious physical setback. For many years he had led a strenuous existence, never free from the worries of an exacting business, whether at Alta or Fallen Leaf. What his near friends feared, happened; his splendid health broke. He made a determined fight against the handicap of encroaching Bright's disease and a weakening heart. He kept in the harness, however, and seemed never to lose his admirable nerve and optimism. I saw him last in late September. He seemed more than ever the genial Billy Price, grown something of a philosopher, as all nature lovers do sooner or later. He died in Palo Alto, November 9, after a few days of serious illness. He leaves his wife and two daughters: Frances Irene (Mills College, 1922), a postgraduate student at Stanford; and Harriet Fredericka, a student at Mills College.

Price did not publish a great deal, largely because he did not like writing. In addition to the articles already cited, he described in The Auk (vol. 14, 1897, p. 182) *Pinicola enucleator californica* from Echo, Eldorado County, and contributed extensive distributional data to Chester Barlow's "Birds of the Placerville-Lake Tahoe Stage Road" (Condor, November 1901, p. 151). "Some Winter Birds of the High Sierras" (Condor, 1904, p. 70) contains observa-

tions made during several midwinter trips to the Mt. Tallac region. Later (1911-12) he spent an entire winter at Fallen Leaf. He contributed to the Overland Monthly and Sunset.

The following species, named in Price's honor, indicate a wider field than birds and mammals in his collecting activities: two fishes, *Villarius pricei* Rutter and *Campostoma pricei* Jordan and Thoburn; a rattlesnake, *Crotalus pricei* Van Denburgh; a chipmunk, *Eutamias pricei* Allen, and a pocket mouse, *Perognathus pricei* Allen[5]. Dr. Grinnell writes that the Xantus Becard (*Platypsaris aglaiae albiventris*) remains known north of the Mexican line only from a specimen taken by Price or his assistants in the Huachuca Mountains, Arizona; and the Yellow-green Vireo (*Vireosylva flavoviridis*) is known from California only on the basis of a specimen taken by him near Riverside.

Price was at one time a Member of the American Ornithologists' Union and of the Cooper Ornithological Club. He was a member of the California Academy of Sciences, Sierra Club, American Historical Association, and Beta Theta Pi.

Price's service to ornithology lay not alone in his considerable collecting operations in then very imperfectly explored or unknown regions, but also in his ability to infect others with his enthusiasm and love of nature. Price was always strongly attracted by the personality of Louis Agassiz (so ably interpreted to us by Doctor Jordan), and a very real desire of his was to practice the methods of the great teacher. It was a splendid aim and focused the energies of a useful career.

Through his activities in the Sierra Nevada, he enlarged and made happier the lives of many hundreds.

Hopkins Marine Station, Pacific Grove, California, January 29, 1923.

BLACK WING TIPS

By CHARLES K. AVERILL

THE HERRING GULL, whether floating overhead, skimming over the water, or at rest, shows, as a conspicuous mark, the black wing tip. This mark is common to all our gulls, except a few Arctic species; and its persistence in so many species indicates that it is of importance in the life of the bird.

The Herring Gull moults its wing feathers in the autumn. I have before me a number of the primaries, forming the tip of the wing, that have been discarded after nearly a year's wear. Before the feather has become at all worn there is a narrow white margin at the tip. This has entirely disappeared in the specimens before me, being worn away to the black. Some of these primaries have a small, round white spot near the tip; this in the moulted specimens has nearly disappeared, being worn away. Still other gulls have a white patch near the tip extending across from front to rear margin. The margin, where white, is badly worn, leaving the black portion scarcely altered.

[5]To these should be added a mosquito named by Dyar.

It is noted in Bent's Life Histories of North American Birds that the white margins of the primaries of the Heermann Gull wear away wholly or partially before spring. We are forced to the conclusion that, were the wing tip entirely white, the flight of these birds would be seriously impaired.

The habit of plunging into the water when fishing no doubt contributes to the wear of the wing, and this habit is common to most gulls, as it is to terns. From reading of the habits of the Arctic gulls, which are entirely white, it appears, however, that they do little fishing, living mainly by robbing smaller gulls, and on the eggs and young of other birds. Hence they may dispense with the black or pigmented wing tip. But there is a reason of general application among birds. It is a matter of common observation that the wing motion of large birds is slower than that of small ones, and we should expect that the wear of a wing moving slowly would be less than that of one beating the air rapidly. The larger Arctic species, Glaucous and Iceland, are the ones with unpigmented wing tips, the Glaucous-winged Gull having pearly wing tips, like its mantle in color. To these must be added the Ivory Gull, an Arctic bird of medium size, entirely white in the adult plumage. This gull is one which does not plunge into the water; in fact, it is said rarely to alight on the water. Other Arctic gulls are small in size and have black wing tips.

Among terns the small size of the bird and the long pointed form of wing would call for a pigmented wing tip, aside from the fishing habit. If we look at the wing of a tern or even at some of the numerous photographs of these birds, it is apparent that the pigment is placed at the outer edge of the primaries where the most wear occurs. In the Sooty Tern the outer portion of the wing is darker than the rest.

Elisha Kent Kane, his brig fast in the ice, in latitude 78° 41', wrote in his diary June 16, 1854: "The snow-birds are the only ones in numbers, crowding our rocky islands and making our sunny night-time musical with home remembered songs." Kane heard no other song bird during his forced stay in this high latitude. The nearest competitor for Arctic honors among song birds is the Lapland Longspur, which is not credited in the A. O. U. Check-List as reaching farther north than 73° in North America, while the snowbird (*Plectrophenax nivalis nivalis*) reaches 83°. For this distinguished service in the far north, it is allowed to wear to some extent the Arctic 'color' of pure white, which the Ptarmigan and occasionally the Snowy Owl have attained. In one form, McKay's Snow Bunting, there is an advance to nearly pure white, but there is no loss of black on the outer primaries. This black is a necessity, as it is for the gull and tern; for the wing is extremely long and pointed for a bird of its kind, I think more so than that of any other of our song birds, and this form, with the extensive migration which the bird is forced to make, demands the best wearing material.

Among Arctic birds the White Gyrfalcon retains the dusky wing tip on account of its pointed wing and vigorous flight. But the Snowy Owl with its soft, easy flight and more rounded wing may dispense with the pigmented tip. The Ptarmigan, with its rounded wing not much used in flight, can also dispense with the pigmented wing tip. Indeed, finding its tail more subject to wear than its wing, it has placed the pigment where of most use.

Among the Anatidae, swans, geese, and ducks, only the swans with their great size, slow wing motion, and absence of diving habit show an entirely

white wing. Snow Geese have the black wing tip. Among ducks, white may occur on secondary wing quills, as in the White-winged Scoter, but not on the outer primaries. In any duck largely white in plumage, as the Old-squaw or the Buffle-head, the black wing primaries are conspicuous.

The Gannet, which has a rather pointed wing and plunges into the water for its food, has a conspicuous black wing tip. So, too, has the White Pelican.

Among herons, entirely white wings occur only in those of the size of the smaller Egret, and in the Little Blue Heron which is about the same size, and the much larger Egret and the Great White Heron. In these birds we have a slow wing motion, a rounded wing, and nothing especial in the habits to cause wear. The Whooping Crane and some ibises and storks show a pigmented wing tip.

Among our shore birds there are none without black or dark wing tips, and in the Avocet and Piping Plover the black outer primaries become conspicuous.

All diving birds, as auks, guillemots, loons, grebes, cormorants, are certain to have the dark wing tips, all the primaries being generally pigmented.

Albatrosses, whose wings are among the longest, have the wearing edge protected by pigment. Although the wing motion is slow, they plunge into the water and are so much on the wing that this is probably a necessity.

Tropic birds (*Phaethontidae*), flying with quick wing beats and plunging into the water, have the outer primaries black.

Black wings among North American passerine birds do not often occur and are a sign of distinction, worn by a few of long pointed wing form, as will be seen by the following list: Evening Grosbeak, White-winged Crossbill, Snow Bunting, Goldfinch, Scarlet Tanager, Rose-breasted Grosbeak, Blue Grosbeak, Indigo Bunting, Bobolink, Baltimore Oriole. All these are of good power of flight, as passerine birds go, and all but the goldfinch make a fairly long migration. If we add to the list such birds as are entirely black, ravens, crows, grackles, blackbirds, and European Starling, we shall still have only strong fliers. Swallows and swifts generally have blackish or dusky primaries instead of black, but the feathers are probably stiffened more than those of ordinary fliers.

Since the outer edges of the wing and tail feathers are more subject to wear than the inner, white markings will generally occur on the latter. It should be remembered, however, that pigment is more easily deposited where light has free access, a point apt to be overlooked by writers on protective coloration.

Special cases are those of the Towhee, which has a rounded black wing in which there is white on the outer edge, and the Magpie, which also has a rounded wing, black but with white patches on the primaries.

That black or dark portions of a feather stand wear better than white portions has long been known, but I am not aware that the disposition of pigment in such a way as to conserve the wing from wear has been noted before.

Bridgeport, Connecticut, January 16, 1923.

RANDOM NOTES ON ALASKA SNOW BUNTINGS[1]

By G. DALLAS HANNA

WITH TWO PHOTOGRAPHS

FEW places where human beings reside are as destitute of bird life as the treeless Arctic tundras in midwinter. Consequently, those species which have the bravery to fight the elements there have gained a greater respect from the inhabitants than has any summer transient. Even the native Aleuts, Innuits, and Eskimos with hearts of flint are moved to pity when they look out from their comfortable huts upon a tiny bird which is endeavoring to find a few bits of food in a wind-swept dooryard. I have seen them scatter cracker crumbs under such circumstances, apparently only for humane reasons. Such a display of tenderness to a wild creature is so unusual up there that it always attracted my attention and made me wonder what process of reasoning had been used. For these are people who derive pleasure out of torturing and starving a dog that works for them; I have seen children amuse themselves by saturating the feathers of auklets with coal oil and setting them on fire before releasing them. Thus are the contrasts of temperament displayed.

There are few winter resident birds of the tundra. The snow buntings, ptarmigan, ravens, and Arctic owls are the principal ones, but in some places, there are leucosticte and wrens. Of course, where the timber line is close at hand, other species may appear, but the Alaska tundra extends far beyond the belt of trees.

I think those persons who spend the winter season in that region obtain a more vivid and lasting impression of the few birds about them than they do of the countless multitudes which come in the summer. The winter seems comparable to a stroll with your comrade through a quiet woodland, while the summer is like an automobile ride through a busy city thoroughfare. In the latter case, as in the nesting season in the Arctic, the burden of numbers obscures all individuality. It takes a decided effort to concentrate the attention in summer on a single species or a single individual bird. But in winter, there is often not more than one kind to be seen in a week.

The various kinds of snow buntings, usually known up there by the name of "snow bird" or "snow flake", are among the most beautiful of the few species of winter residents. Their white plumage has just enough tinge of rusty color to give them the appearance of cheeriness and warmth. They are usually seen in small flocks and do not hesitate to search for their food about the hamlets and villages. Some people enjoy feeding them just to keep them close by, and they are sometimes trapped for pets, but otherwise they are rarely molested. In captivity, they usually batter away their lives in a few months against the bars of their cages, the vitality required to withstand a winter there out of doors apparently being too great to be confined in a small enclosure.

As springtime draws near and patches of earth and moss begin to show through the blanket of whiteness, the snow buntings change to a darker plumage, and the males begin to deliver their marvelously beautiful song. This

[1]Contribution from the California Academy of Sciences.

song cannot be described here, but if the north land ever develops a poet, his task will not be complete until he has sung the exquisite tune. It continues from early spring until late fall after the second brood of young has flown.

During my ten years' residence in Alaska, it was my good fortune to become personally acquainted with all three of the different kinds of snow buntings which inhabit that territory. The resident bird of the mainland (*Plectrophenax nivalis nivalis*), however, was never found in abundance in the Bristol Bay and lower Kuskoquim River districts. Occasionally in winter, small flocks descended to the lowlands and the villages in search of food; they never remained long, but stories were heard many times of their having come on former occasions in flocks of thousands and remaining for weeks. If they remain in those districts in summer to build their nests and rear their young, they escaped my notice entirely. There are many mountains in the region

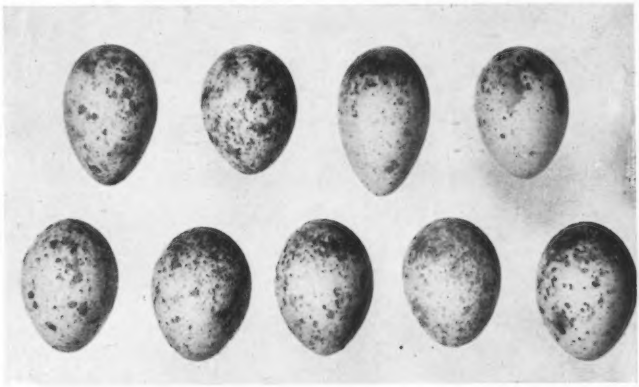

Fig. 22. Eggs of the Pribilof Snow Bunting. One specimen selected from each of nine sets to show variation.

which have never been explored and my travels took me to the higher portions of only a very few. Thus, while it is entirely possible that the birds may nest in the coast country between the Alaska Peninsula and the mouth of the Kuskoquim, I have not heard of an authentic record. Many other species, such as eagles, ravens, and magpies, are not regularly found in the same district, although it seems admirably suited to their needs.

The snow buntings do nest on the higher portions of some of the Aleutian Islands, such as Unalaska, where, in May, I have found them building enthusiastically among the rugged spurs of Pyramid Mountain, back of the harbor. In fall and winter, they resort to the lowlands and are often seen and captured in the villages.

On the islands of Bering Sea, the birds have become modified; on the Pribilof or Fur-seal Islands, we find the subspecies, Pribilof Snow Bunting (*Plectrophenax nivalis townsendi*), while on St. Matthew, 200 miles farther north, is found McKay Snow Bunting (*Plectrophenax hyperboreus*). Just why this subspecies and species should have evolved, when their island homes are so close to the residence of the parent species, is difficult to understand. Else-

where, *P. nivalis nivalis* is found entirely around the northern hemisphere and there is undoubted flying back and forth between the islands and the mainland of Bering Sea. *P. nivalis nivalis* has been taken on the Pribilof Islands[1], and *P. hyperboreus* has likewise been taken there[2] as well as on the mainland of Alaska[3], where it was first discovered by the intrepid McKay. It hardly seems possible that such wide-ranging birds should develop so diversely in so short a distance.

On the fur-seal islands of St. Paul and St. George, the Pribilof Snow Buntings form a conspicuous part of the bird life throughout the year. In winter, they may be seen about the dooryards almost daily, gathering the food which has been placed out intentionally or unintentionally for them. With little fear and a congenial chirp always ready for the human observer, they have gained the love of the inhabitants as no other species has done. But not nearly all of the summer birds remain through the winter on the islands. Where they go cannot be stated positively; but that they go some place, we may be certain.

These migrants return to the islands in April and May, as the snows are fast leaving the highland tundras where they go immediately to join their companions that have had the courage to brave the Arctic winter. Long days of nest building, feeding young, and joyous song keep them busy from May until the fall moult begins in September. A site for a nest is almost invariably chosen beneath a flat slab of lava rock in country which is excessively rough. A dark recess is chosen which will allow the bird to pass easily in or out, but is yet so small that the possibility of a blue fox getting to the nest is very remote. This is the only animal against which precaution must be taken; there are no other enemies; but of foxes, there are very large numbers. (As many as a thousand skins of these animals have been taken on one small island in a single winter, 1920-21.) The top of the nest is built flush with the surface of the cavity beneath the rock. It is started with coarse grasses and, as construction progresses, successively finer grades of this material are used. Finally, the inside lining of white feathers is put in place. Oftentimes, some soft reindeer hair is added to the feather lining.

Four to six eggs are laid in May or early June. The female attends methodically to the incubation, while the male keeps her entertained through the almost perpetual daylight with a most charming, musical song, which must be heard to be fully appreciated.

The eggs are not white, as one might expect from the coloration of the parent birds, but the average set has a ground color "light mineral gray" or "pearl gray"; sometimes it becomes "deep bluish glaucous"; again, it may be so covered with spots as to be almost unrecognizable. The deepest spots in the shell substance are very faint and in color "pallid vinaceous drab"; as a rule, these are not very abundant and may be present or entirely concealed in the same set; they often give the egg a vinaceous tinge when viewed at some distance; most of them are not more than two millimeters across, but large blotches are not infrequent. The next to the deepest spots are light brown and they are usually applied in large blotches, massed over the larger end of the egg. This bold coloring is succeeded by spots which are usually small and

[1]Evermann, Auk, 30, no. 1, p. 18 (January, 1913).
[2]Hanna, Auk, 37, no. 2, p. 254 (April, 1920).
[3]Osgood, N. Am. Fauna, no. 24, p. 74 (1904).

scattered and of a "wood brown" shade. These may be succeeded by a few small round black spots and, occasionally, a black blotch or pencil line. The eggs of a single set are usually very uniform in coloration, but in a series of sets, there is great variation. The photograph shown herewith (fig. 22) was taken on a color sensitive plate to show this point, as well as possible, in black and white. It also shows the great variation in size and shape among the eggs of several individuals.

MEASUREMENTS IN MILLIMETERS OF EGGS OF PRIBILOF SNOW BUNTINGS[1]

Number or set mark								Average
1/6	Length	23.7	24.0	24.2	22.6	24.0		23.70
	Width	16.5	16.6	16.9	17.0	16.8		16.72
a 1/6	Length	22.6	22.8	22.5	22.1	22.7	23.0	22.61
	Width	16.6	16.9	17.0	17.3	17.0	17.0	16.98
5/29	Length	22.0	22.3	21.9	23.0	22.3		22.3
	Width	17.0	17.4	17.0	16.8	17.3		17.1
5/27	Length	25.8	24.5	25.1	25.4	24.7		25.1
	Width	16.4	16.2	16.4	16.4	16.4		16.36
6/4	Length	25.5	26 6	25.0	25.5	25.4		25.6
	Width	17.7	17.8	17.7	17.7	17.6		17.7
1941 CAS	Length	22.4	22.7	22.9	22.1			23.0
	Width	16.5	16.5	16.6	16.2			16.45
1940 CAS	Length	23.6	23.7	23.4	23.9	23.2	23.1	23.46
	Width	17.3	17.0	17.3	17.5	17.5	17.1	17.39
1930 CAS	Length	23.1	23.2	23.3	23.7	23.7		23.4.
	Width	17.8	17.6	17.3	17.5	17.5		17.54
1731 CAS	Length	23.6	23.0	22.8	22.0	23.3		22.94
	Width	17.5	17.5	17.2	17.1	17.5		17.36

Greatest length	26.6
Least length	22.0
Greatest width	17.8
Least width	16.2
Average length, 46 eggs	23.56
Average width, 46 eggs	17.09

The young birds hatch just at the time when the insects on the Pribilofs are coming out in large numbers. There are no mosquitoes, but of flies and beetles there are a great many, on the larvae of which the fledglings thrive and grow at an astonishing rate. By the fourth of July, many of the young have flown and are able to take care of themselves without assistance. The parents start over again and repeat the nesting operations, rearing a second brood before the early frosts drive the insects into the ground.

The young birds in first plumage are gray and spotted, very unlike the adults with their black and white and rusty. Moreover, the young birds flock together in fall, sometimes by hundreds, and it is believed to be these that migrate from the islands while their parents remain behind.

The land birds of these islands must be subjected to some very great mortality each year. Otherwise, it would seem that the rearing of two broods each summer would simply overpopulate the available land. One pair of leu-

[1] I am under deep obligations to Professor Harold Heath of Stanford University for the privilege of presenting herewith measurements and photographs of eggs of the Pribilof Snow Bunting in his collection.

costictes, longspurs, snow buntings, or wrens will produce as many as twelve offspring in a single season. Yet murres or auklets, each pair bringing forth but one a year, number millions on the very same islands.

As to the number of snow buntings on these islands, it must be admitted that estimates cannot be of great accuracy. Nevertheless, figures possess a value as showing the belief of the observer on a certain date and often possess a historical significance in case of diminution or increase of the species later. Considerable thought has been given in the field to the actual number of birds of this species living on the Pribilofs. In the spring of 1920, there did not appear to me to be more than 100 pairs on St. Paul Island and about the same on St. George. Of course, in the fall this number is greatly increased by the young birds which have hatched during the summer. With an opportunity

Fig. 23. Nest and eggs of the McKay Snow Bunting. Photograph taken by breaking away portion of the hollow drift log in which the nest was located.

to look for fluctuations in numbers during seven successive seasons, no great difference was noted, such as was the case with the wrens[5] or the leucostictes[6].

It was my good fortune to spend a few days in early July, 1916, on the St. Matthew Island Bird Reservation—the only known breeding ground of the beautiful McKay Snow Bunting. Here, the males greeted me with their songs from the time I landed on Cape Upright until I left Cape Gloria of Russia and Hall Island. They were very common throughout the length of the island, much more so than the Pribilof Snow Bunting on the fur-seal islands. And, unlike the last, which resorts to the highlands to nest, the hyperborean species was most common on the lowlands, especially in the driftwood piles above

[5]Heath, Condor, **22**, 1920, pp. 49-55.
[6]Hanna, Condor, **24**, 1922, p. 89.

high-tide mark. When this fact was fully appreciated, a search for nests was soon rewarded with success. Much to my surprise, all that were found were in the dark recesses of hollow logs which had drifted there from the mainland of Alaska or Siberia. (There are no trees on the islands in Bering Sea.) Through a strange coincidence, the holes occupied were sometimes those which had once been excavated by woodpeckers when the driftwood stood in some forest.

Back in the hollows, the nests were set flush with the loose decayed wood. Also, they were constructed in a similar manner and of the same sort of materials as the Pribilof Snow Bunting's nests, except that reindeer hairs were omitted because of the absence of these animals from St. Matthew. The walls of one nest measured about one inch thick and the inside cavity was two inches deep by two and a half inches wide. Feathers of Arctic owls and sea gulls were noted in the nest lining. Most of the nests found contained young birds or well incubated eggs.

The coloration of the eggs was very similar to that of the eggs of the Pribilof Snow Bunting, except that the brown blotches were applied with more boldness. In one set, these blotches were arranged in an indistinct zone about the larger end. The eggs of this set, measured in millimeters by Mr. Joseph Mailliard, March 4, 1922, are as follows: 22.3×17.2; 22.5×17.3; 21.9×17.2; 22.0×17.3.

San Francisco, December 21, 1922.

FROM FIELD AND STUDY

Fish Crow in Texas.—Attention has been directed to the distribution of the Fish Crow (*Corvus ossifragus*) through correspondence with Mr. H. E. Wheeler of Conway, Arkansas, who recently published (Wilson Bulletin, December, 1922, p. 239) an item regarding the occurrence of the bird in Arkansas. So far as our observations go the bird does not occur in any part of Oklahoma. Mr. Wheeler states in his article that the bird is common in Texas but neglects to name localities. Ridgway (Birds N. and M. Amer., III, p. 274) is probably the most recent authority on the distribution of the bird. He does not give any part of Texas in its range, but says the bird occurs along the Gulf coast as far west as Louisiana.

M. L. Alexander in "Wild Life Resources of Louisiana", 1921, states that the Fish Crow replaces the Common Crow along the coast of that state, and although not specifically saying so, implies by this that he means the entire coast—as far as the Texas line.

The peculiar ecological conditions which typify this region and in which the Fish Crow finds things to its liking extend westward into Texas, and the bird should confidently be expected to occur there. Published statements to that effect have been lacking, however, so we take pleasure in giving one locality in that state where the bird is certainly a resident.

Mr. Pemberton spent most of February and March of 1922, and Mr. Kirn all of the time between December, 1921, and November, 1922, at Orange, Texas, and in the country to the west thereof. During all of this time Fish Crows were observed and while no specimens or eggs were taken, old nests were examined which undoubtedly belonged to this species. The birds struck both of us at once as being different from the crows of Kansas and Oklahoma. In size they were smaller; their flight more undulating than direct; their individual antics more playful; they were far easier to approach and observe; and most diagnostic of all, their voices were entirely different from that of the Common Crow. Their normal call is a hoarse, soft croak-like *caa*,

which is terminated abruptly, rather than the somewhat prolonged strident *caw-caw* of the Common Crow. When first heard, one gets the impression that the bird has a decidedly sore throat which renders calling very difficult and unpleasant and that a decision *not* to call is made after the call is started. There is that certain difference between this call and that of the crow as there is between the Eastern and Western Meadowlarks, and once heard it would never be forgotten. The Fish Crows were never seen away from moist areas and it is assumed that crayfish and the like form most of their food. Rice is the only local cultivated crop and is not planted every year; so, while the birds feed in the inundated rice fields, it is doubtful that they eat the rice.—J. R. PEMBERTON and A. J. KIRN, *Tulsa, Oklahoma, January 1, 1923.*

A Nest of the Leucosticte on Mount Dana, Tuolumne County, California.—While climbing Mount Dana on August 2, 1922, in company with H. L. Mason of the Carnegie Institution party, I noted a female Sierra Nevada Rosy Finch (*Leucosticte tephrocotis dawsoni*), at an altitude of about 11,300 feet, on a moderately steep southwest-facing slope not far from the top of the main ridge. Presently, as I watched the bird, it disappeared under a broad, flat rock, and on investigating I found, six inches back, a nest containing three small young in natal down, apparently not many hours out of the egg. The nest was built principally of sedges, the plant bases or stubble having been utilized for the mass of the nest, with finer materials for the lining. There was little vegetation in the immediate vicinity, the closest being an *Arabis* sp., and the nearest sedges being at least one hundred feet distant. The bills of the young birds were bright yellow. The only sound we heard them utter was a faint *peep*. When they noticed any disturbance in the vicinity of the nest, the little ones raised their heads and opened their mouths to the widest possible angle.

Only one parent, apparently the female, was seen. She was not shy, but several times came and went to and from the nest while we were close by. During the examination of the nest she remained close at hand, giving a call note resembling *plirp* or *plirp plirp*. Once she caught and ate a winged insect of considerable size. As soon as we left the nest, the parent proceeded to it and brooded the young, conversing with them in a soothing manner, using syllables like *tik tik tik tik tik* as she covered them. One of the young birds, after I took it from the nest, had dropped some fecal matter on a rock near the entrance to the nest. The parent picked up the fecal matter in her bill and carried it away over the rocks; the nest was noticeably clean, no eggshells or feces being observable either in or outside of it. For twenty minutes while we were eating lunch (11:45 A. M. to 12:05 P. M.), the mother steadily brooded the young, as well she might, for a decidedly cool wind had come up, and a thunderstorm was brewing.

After reading Dawson's thrilling account of the discovery of numerous nests of this Rosy Finch in the Mammoth Pass region and elsewhere (Jour. Mus. Comp. Ool., II, 1922, pp. 8-26) the nest here recorded seems chiefly notable for its unusually prosaic surroundings, little more of adventure or of daring being recorded in the course of its discovery and observation than is usually the case with a junco's nest.—WALTER P. TAYLOR, *U. S. Biological Survey, La Jolla, California, November 17, 1922.*

Bobolinks in Oregon.—The observation of the Bobolink (*Dolichonyx oryzivorus*) in any of the Pacific Coast states or provinces is of interest. I am therefore prompted to mention two records of long standing, which came to my notice while connected with the Department of Zoology of the Oregon Agricultural College.

The first observation was made in 1903. Two of my students, working at the branch Experiment Station at Union, Oregon, reported a strange bird in the fields. To obtain an identification they sent a pair to Corvallis. The birds were later mounted and photographed by the writer. The data accompanying the photograph are "Photo 37, *Dolichonyx*, female, male; Union, Oregon, June 29, 1903; W. T. Shaw. Collected by F. C. Houghton and Leroy G. Matley." One of these birds, the male, is now in the collection of the Oregon Agricultural College.

The second observation was made at Lake Malheur, Oregon. On July 4, 1906, while collecting along the low grass-lands bordering this lake, a colony of Bobolinks

was located. At least eight or ten birds were seen, apparently well established, the males in full song, reminding one of a June day in the clover fields of the East. At least one specimen was taken, and now bears this data: "*Dolichonyx oryzivorus*, male, Lake Malheur, Oregon. Collected and mounted by W. T. Shaw." This specimen is now in the Oregon Agricultural College collection.—WILLIAM T. SHAW, *Pullman, Washington, January 10, 1923.*

Band-tailed Pigeons Increasing in California.—Until May, 1922, I had for some years seen only occasional Wild or Band-tailed pigeons (*Columba fasciata*). About May 30, 1922, however, during a trip along the coast north of the Russian River and in the vicinity of Fort Ross, I saw one morning seven flocks; the smallest flock numbered ten, the largest flock, from thirty to thirty-five pigeons.

Toward the end of November, 1922, in Pasadena, near the residence of Mrs. Howard Huntington, I saw two large flocks on several successive days. There were possibly 125 pigeons all told, and they were resting in some large eucalyptus and sycamore trees in a canyon below the house.

January 5, 1923, in Bollinger Canyon, Contra Costa County, back of San Ramon, I saw two flocks, one of about twenty, the other of about seventy-five pigeons. They seemed to be feeding on toyon (red) berries.

January 13, 1923, near Jolon, Monterey County, I saw probably three hundred pigeons, scattered over a territory about a mile square. January 15, 1923, at the same place, I saw one flock of 200 to 250 birds. They were feeding on acorns and were probably a gathering of the scattered birds seen on the 13th.

January 20, 1923, near Ojai, Ventura County, I saw several flocks. One flock, feeding in a grain field, numbered from three to five hundred—nearer five hundred.

January 25, 1923, I was again in Pasadena, and the canyon near Mrs. Huntington's house was full of pigeons flying around and alighting in the high trees near by. When they flew they made a loud, quite noticeable, flapping noise. I do not think that there was one less than 500. Mrs. Huntington told me that the pigeons had been there since I first saw them, in November, 1922, and in larger numbers. They were evidently using this canyon for a resting place, and going out to some other place to feed. They were so numerous that they were exciting much local attention.—ALLEN L. CHICKERING, *San Francisco, California, February 1, 1923.*

The English Blackbird in California.—For a number of years there has reposed in the collection of the Museum of Vertebrate Zoology a dark plumaged thrush which was thought by some people to be merely a melanistic example of the Western Robin. In fact, the writer had so accepted the bird, and had used it on two or three occasions in demonstrating color abnormalities to classes in vertebrate zoology, contrasting it with an almost complete albino Robin of undoubted identity. But a recent critical study, made at the suggestion of Mr. H. S. Swarth, showed that the bird was not a Western Robin at all. On the presumption that the bird in question was an individual which had strayed out of its normal path of migration, the descriptions and illustrations of dark-colored thrushes in Central America and eastern Asia contained in Seebohm's Monograph of the Turdidae were examined, but without revealing any species with which the specimen in hand might be linked. The bird was then submitted to Dr. Charles W. Richmond for comparison with the National Museum material and he identified it as a female English Blackbird, *Planesticus merula* (Linnaeus).

The specimen in question was collected by F. O. Johnson at Oakland, California, on December 6, 1891. It came with the rest of the Johnson collection to the Museum of Vertebrate Zoology and is now number 10688 of the bird collection. In an article published soon after its capture (Zoe, III, 1892, pp. 115-116), Johnson described the bird, identifying it as a melanistic Robin (*Merula migratoria propinqua*). He also gave the circumstances of capture and these are worth quoting in the present connection.

". . . While pursuing a Townsend's sparrow which had flown to the top of a tall growth of jasmine, I noticed on the opposite side of the bush a strange bird moping in the shade. It observed me just as I saw it, and hopped sluggishly to another branch

putting a bough between us. . . . My first impression was that it might be a catbird which had strayed from his rightful home. I crept up . . . and easily approached within twenty feet. It made no note and did not pay the least attention to my maneuvers. When I killed it, I was still more puzzled, for it was totally different from anything I had ever seen. It appeared much like some European thrush." Johnson describes its plumage in detail, then gives a number of points, notably the slighter notching of the bill, in which the specimen differed from the Western Robin. These differences he seemingly thought might have been produced along with the supposed disturbance in the color-producing mechanism, though even after having decided to call the bird a melanistic Robin there seems to have been some doubt in his mind as to the correctness of the identification. The behavior of the bird so far as described above quite agrees with that given for the English Blackbird in its home range.

Had Johnson measured his specimen he would have found that it was quite different from the Western Robin. The measurements are as follows: Total length (dry skin) 240 millimeters; wing 113; tail 99; tarsus 30.3; bill from feathers on forehead 20; from skull 21.8. The wing measurement in particular is well below the minimum for the Western Robin.

What is the probable source of this bird? It seems very unlikely that it was a wild stray, an "accidental" from Europe; so far as I can ascertain, the species has not hitherto been reported anywhere on the American continent. Save for a slight abrasion of the tail feathers, which might be a consequence of its brush-seeking propensities, the specimen does not show anything which would suggest that it was a recently-escaped cage bird.

It so happens that a short time prior to the capture of this bird there was some activity in the importation of European song birds on the Pacific coast. A. W. Anthony (Zoe, II, 1891, pp. 6-11) has referred to a society which was formed at Portland, Oregon, in 1888, for the importation of European song birds. In May, 1889, about five hundred individuals, representing a number of common European species were received and released near Portland. Included in these were sixteen pairs of "black thrushes (*Turdus merula*)." The latter were reported in the spring of 1890 as among the species which survived, though the evidence for correct identification in this report was not wholly satisfactory according to Anthony. In Europe the Blackbird is migratory. It may be that some of the birds released at Portland migrated south into California and that Johnson secured one of these. The chance of this seems small, though it is not an impossible occurrence. Or, the activities of the Portland society may have inspired some one in the neighborhood of Oakland to import and release European birds. There is no record of this so far as I can find.

In brief, then, a specimen of the English Blackbird, originally reported as a melanistic example of the Western Robin, has been taken in California. This leads me to ask, in closing, has any collector ever taken a melanistic example of the Western Robin?—Tracy I. Storer, *Museum of Vertebrate Zoology, Berkeley, California, December 21, 1922.*

Mimicry in Bird Songs.—The article on the Mimetic Aspect of the Mocker's Song by Mr. Donald R. Dickey (Condor, XXIV, pp. 153-157) is of unusual interest. Mr. Dickey evidently assumes that birds in general acquire the ability to sing by inheritance rather than by imitation of parents. Would it not be equally as good a supposition to think that the young mocker he mentions had learned to "imitate" the Sparrow Hawk, Killdeer, and Cactus Wren from hearing its male parent sing these notes? At least, if Mr. Dickey is right, the instance is of more than mere ornithological interest, for it involves the inheritance of acquired characters, the possibility of which some modern evolutionists have denied.

The question brings to mind the imitations by the Starling in the eastern United States. This bird, so recently brought to America, has learned to imitate the notes of many American birds. If such a thing is possible, there would hardly be time for this species to acquire these notes by inheritance. Yet imitations of some species, such as the Wood Pewee, Chickadee, Grackle, Cowbird, and Bluebird are so common, at least in southern Connecticut, that they almost seem to be part of the Starling's own notes.

Mr. Charles A. Upner (Auk, xxxviii, p. 459) has remarked this concerning the Wood Pewee note, and has suggested that the similarity is a coincidence and not an imitation.

Having been acquainted with the Starling in America since 1902, I doubt the coincidence, and believe that the Wood Pewee note originated as an imitation. The first Starlings that I knew at New Haven, Connecticut, between 1902 and 1908 did not, to my knowledge, sing this note. Returning to the region in 1913, after an absence of five years, I found the note commonly used by them.

It is my belief that this Wood Pewee note and other imitations are handed on from parent to offspring not by inheritance, but by imitation of the parent by the offspring. In the days when the number of individual Starlings in America was still small, one or more birds learned from the Wood Pewee its plaintive three-note song *pee-a-wee*. Since then new generations of Starlings have learned this note mainly from their parents, not from the Wood Pewee. The fact that the Starling is increasing in numbers, that a majority of its young live to maturity, has fixed the Wood Pewee note in the Starling's vocabulary so securely that it seems to be one of its own notes and not an imitation.

This seems to be true also, to a lesser extent, with the notes of the Bluebird, Grackle, Chickadee, and Cowbird. All these notes are much commoner with Starlings than are any imitative notes in the songs of the two native imitators of this region, the Catbird and Brown Thrasher. The fact that the Wood Pewee sings two two-note songs also, "pee-ah" and "ah-wee" and that these have not, to my knowledge, been acquired by the Starling seems to point to the correctness of my conclusions, though this might also be taken as evidence that Mr. Upner's suggestion concerning the Wood Pewee note is right.—Aretas A. Saunders, *Fairfield, Connecticut, December 8, 1922.*

Some Late Occurrences of the Barn Swallow in Southern California.—The tens of thousands of swallows of several species which congregated about Buena Vista Lake, Kern County, California, in the late summer following the breeding season and during the fall migrations in 1922 reached the peak of numbers about the first of October. The species present are named in the order of abundance.

Tree Swallow (*Iridoprocne bicolor*); Barn Swallow (*Hirundo erythrogaster*); Cliff Swallow (*Petrochelidon lunifrons lunifrons*); Rough-winged Swallow (*Stelgidopteryx serripennis*); Violet-green Swallow (*Tachycineta thalassina lepida*); and Bank Swallow (*Riparia riparia*).

After October 1, a daily decrease was noticeable until by the 15th practically everything except Tree Swallows (which winter commonly in the locality) had passed on. Cliff Swallows were seen on October 12 in fair numbers. They had almost disappeared on October 13, and the three that were noted positively on that date were not collected. The Barn Swallows remained a few days longer. About two hundred scattered birds were seen on October 13, and one specimen taken. As late as October 16, three were seen, none of which was secured. They all passed close overhead, but at inconvenient moments when no gun was at hand.

On November 3, 1921, on the marsh at Anaheim Landing, Orange County, California, a trio of Barn Swallows was seen flying south. They passed over at such short range that there could be little chance of a mistake in the identity.—A. J. van Rossem, *Pasadena, California, December 21, 1922.*

Unusual Shelter of Some Hepburn Leucosticte in Winter.—Mr. Luther J. Goldman, Predatory Animal Inspector, United States Biological Survey, has sent in the following observation from Washington State:

"On January 10, 1918, I observed a flock of Leucosticte fluttering about a cliff overhanging the banks of the Snake River, near Alpowa, southeastern Whitman County, Washington. On closer approach, I found they had taken shelter from the raw wintry wind in the deserted mud nests of a colony of cliff swallows. As I watched them a part of the flock flew to a nearby hillside, fed about for a few minutes and returned to the cliff, and, clinging for a moment to small sharp projections, they one by one dis-

appeared into the mud nests, some turning about to peer out curiously and quite fearlessly. There were probably fifty birds in the flock."

Specimens collected by Mr. Goldman are the Hepburn Rosy Finch (*Leucosticte tephrocotis littoralis*).—WALTER P. TAYLOR, *U. S. Biological Survey, La Jolla, California, September 14, 1922.*

The European Widgeon in Oregon.—On November 27, 1922, while collecting birds at Netarts Bay, Tillamook County, Oregon, I took a male European Widgeon (*Mareca penelope*). So far as I know, this species has not previously been recorded from Oregon.—ALEX. WALKER, *Blaine, Oregon, January 19, 1923.*

Chickadees Resting in a Robin's Nest.—On the afternoon of August 11, 1922, I arrived at a spot on the Yuba River about four miles above Cisco, Placer County, California. While making camp I noticed an abandoned nest of the Western Robin in the top of a young lodge-pole pine, about ten feet from the ground. The tree stood about thirty feet from the tent.

That evening while eating late, when all diurnal mammals and nearly all birds had retired, I heard the subdued but distinct call of the Mountain Chickadee (*Penthestes gambeli*) near by. On hearing the second call, I looked in that direction just in time to see the fluffy form of the bird slip into the Robin's nest. Glancing at my watch I noticed it was just three minutes past seven. I walked over and gently tugged at the tree, whereupon the bird appeared on the edge of the nest, glanced about for six or eight seconds and dropped back out of sight. The next morning I was awakened at exactly five o'clock by a chickadee singing from a branch not over four feet above my head. He continued for three or four minutes and then disappeared. Each night and morning, with one exception, this routine was repeated with mechanical regularity until I left on August 19. The exception was on the 14th. I was watching for the bird to appear, and at three minutes past seven it had not yet arrived; nor had it come at four minutes past seven; but at exactly five minutes after seven it came skipping through the branches by the usual route and quickly hopped into the nest without stopping for the usual evening song!

Each evening I aroused the bird by gently shaking the tree and each successive time it required more shaking to induce him to appear until, on the last night (August 18), I was compelled to give the tree several rather vigorous jerks before he appeared on the edge of the nest. And correspondingly, each successive time he remained in view a shorter period of time, until on the last night he merely appeared, turned about, and hopped back. The arrivals and departures were always by the same route, that is, the tree over the tent.—FRANK N. BASSETT, *Alameda, California, January 17, 1923.*

Mockingbird in Humboldt County, California.—Early in the winter of 1922, Mrs. Ida Varley, of Ferndale, Humboldt County, California, heard the unmistakable song of the Western Mockingbird (*Mimus polyglottos leucopterus*) from her roof top. Going out to see this unheard-of bird in this locality, she watched him as he perched on the roof, singing softly, as though not feeling quite at home. He remained about the place for several hours, but did not sing again. After a few days of apparent absence, he reappeared, and has remained in the vicinity of Mrs. Varley's home—making visits also to the grounds of near neighbors—at least up to December 27, when the writer saw him there, and observed him for several hours.

The bird is alone so far as any other of his species is concerned, and the birds of other local species regard him as an alien, his appearance in any bush or tree being a signal for every other bird to depart at once. He feeds on the scarlet fruits of the cotoneaster and hawthorn. Since the first song, he has not been heard to sing again.

There is no possibility of mistake as to the identity of this bird, the writer having had a familiar acquaintance with the Mockingbird for twenty-five years in southern California. Mrs. Varley also has known the species for many years in the central part of the state.—CHARLOTTE M. WILDER, *Carlotta, California, January 18, 1923.*

EDITORIAL NOTES AND NEWS

The discovery of a new *species* of bird in North America is of late years a well-nigh unknown event. Rather startling, then, is an announcement in the Auk for January, 1923 (p. 90), of the finding of a new Clapper Rail in the Colorado River bottom near Yuma. Mr. Donald R. Dickey christens this bird the Yuma Clapper Rail (*Rallus yumanensis*), new to science, and also a species new to California. Its relationships are with *Rallus levipes* of the coast of southern California; but it is so very much smaller that intergradation seems unlikely, especially in view of its wholly isolated habitat.

Mr. A. W. Anthony has resigned from the post of Curator of Vertebrates on the staff of the Natural History Museum of San Diego, to go into other work. His place was filled on March 1 by Laurence M. Huey, the experienced field naturalist and collector who has been working under the direction of Donald R. Dickey for several years past. The work of the San Diego Museum of Natural History will henceforth concern itself most especially, it is announced, with education among the schools of the city. Also, a series of nature walks and lectures has been inaugurated under its auspices.

We learn from the Ibis that our British confreres are busy on one section of the proposed new check-list of the birds of the world. We wonder what the A. O. U. Committee on Nomenclature is doing in regard to our share of the work. Why should we be behind-hand, with our "Systema Avium Nearcticum"? The promised American contribution to the international series will, as we understand, supercede the A. O. U. Check-List, as standard authority for names and for concise information in regard to manner of occurrence and distribution. It must, therefore, be a well-ordered, uniformly handled, conservative product. It should not be the output of any one man, at least without the concurrence in every detail by others officially designated as representative of American opinion. It should represent a fair consensus of opinion and knowledge in America.

Some of our more active and sincere field students of birds are beginning to resent the statements made over and over again by ardent protectionists that bird life in the country at large is rapidly decreasing. As a matter of fact our bird life has greatly *increased* over what it was when the pioneers first came. We recently heard Allan Brooks say that in certain parts of the northwest familiar to him for many years, birds now exist in numbers five to one as compared with their numbers not so many years previously. As a general thing, cultivation, reclamation and deforestation mean a marked increase in the aggregate number of individual birds, and immigration of bird species new to the locality. There is thus an actual increase in the number of species—though of course some specialized types disappear. In many localities new appearances outnumber extinctions. Misstatements of fact are not justified in any connection, even when arguing for perfectly justifiable and wholly desirable protection. Sentiment cannot rightly be cultivated at the expense of truth.

The Autobiography of John Macoun has been published as a memorial volume by the Ottawa Field-Naturalists' Club during the past year. It is a book of pleasing appearance, well written and attractively illustrated. Macoun was not an ornithologist primarily, despite the accomplishment of a large amount of bird work during his lifetime, and birds appear but incidentally in this account of his career; but there is much to attract a naturalist, whatever his specialty, in the accounts of early days in various parts of Canada. Of interest, too, is the story of the beginnings of certain great undertakings, of which the present generation is familiar only with the final accomplishment.

The Roosevelt Memorial Association, 1 Madison Ave., New York City, has sent out a request for any original letters or copies of original letters written by Theodore Roosevelt and dealing with wild life conservation and related subjects. These are to be printed in a volume that will contain also the various published esays and addresses which he wrote on the preservation of animal life.

In connection with the communication in the January *Auk* on "generic subdivision" it may be of interest to call attention to an earlier protest along the same lines as that inaugurated by Mr. Taverner. The letter reproduced below was sent from Berkeley with the signatures of local ornithologists, as here given. Copies were sent to certain eastern centers, whence they were forwarded to the A. O. U. Committee on Nomenclature with additional signatures.

September 16, 1920.

The American Ornithologists' Union Committee on Nomenclature and Classification,

Gentlemen:

In the course of your labors upon the sev-

eral supplements to the American Ornithologists' Union's "Check-List" and upon the revised edition of the latter that it is planned to publish, you are required to pass upon many generic changes which of recent years are being proposed in increasing number. We, the undersigned, wish to protest against the general adoption of those changes resulting from the division of genera of long standing, of convenient size and of real usefulness, into several smaller groups, often into several monotypic genera. We believe the function of the genus is to *show likenesses* quite as much as to emphasize differences. We believe the limits assigned to a given genus to be largely a matter of convenience, and they are usually, therefore, a matter of opinion; we do not believe that a host of monotypic genera serves any purpose of *convenience* to the great majority of working ornithologists.

Apparently the many changes of the nature indicated, that are being urged, are the work of a few individuals. Judging from the comments of many writers, the majority of the working ornithologists of North America are opposed to the practice, and, in this belief, we adopt this means of concentrating these scattered objections and giving them more force.

In this petition, which must be of a general nature, it is not desirable to state explicit objections to any particular genus or genera lately proposed. We urge, however, that, in general, the Committee on Nomenclature and Classification use the utmost conservatism in the adoption of generic changes of the nature above indicated.

We suggest further for your consideration that in connection with the listing from time to time of proposed generic changes (which has been done together with other proposed changes), the Committee adopt some means of eliciting opinions from the working ornithologists of North America. It might be desirable for the Committee to issue at intervals in mimeograph form lists of proposed changes upon which they desire the opinions of others. The generic changes above referred to might well be influenced by such a vote.

Harry S. Swarth
Joseph Mailliard
Barton W. Evermann
J. Grinnell
H. C. Bryant
J. Eugene Law
W. K. Fisher
Leverett Mills Loomis.

PUBLICATIONS REVIEWED

WESTERN BIRDS. By HARRIET WILLIAMS MYERS. Macmillan, New York, 1922. Cloth, 12mo, 392 pp. with 53 pp. of illustrations. $4.00.

The author, in her Foreword, states that she is dealing with the song birds of the west coast, and that she has followed the A. O. U. Check-List. By song birds, Mrs. Myers evidently means all but water and game birds, and birds of prey. Beginning with the Roadrunner, the most common birds are considered. The wish of the author is "to have the information so plain and simple that the most unscientific of readers may enjoy and become more familiar with our feathered wild life."

That this wish is being fulfilled is evidenced by the fact that many people not otherwise interested in birds are reading this book, and saying "we all feel we want to study the birds." (Mrs. Foote, reviewing for the Higland Park Ebell Club.) Members of the California Audubon Society are pleased with the fair presentation of economic value, with the nice balance so justly maintained between the economic value and the aesthetic enjoyment suggested, and with the amount of descriptive statement.

The appearance of the book is tempting; the many original photographs, the good paper, and the large type are appreciated. Indeed, the type is almost disconcertingly large. The student, accustomed to find his identifying descriptions in fine print and italics, scarcely realizes that he is being given a scientific description until it is all over. Looking again, he often discovers family characteristics described; then one member and another are distinguished, and the student is assured that the identity of this particular bird is unmistakable. Mrs. Myers gives what Lynds Jones calls single characteristics, thus gently leading the beginner to the attainment of powers of discriminative study. The comparison of western with eastern forms is also helpful.

Mrs. Myers does not expect Cooper Club members to find much that is new in the book. For one reason, much of the material has already appeared in THE CONDOR. The writer recalls Dr. Grinnell's comment on the Rufous-crowned Sparrow material, to the effect that we need more such biographies. Serious students are commending the book, however, for its wealth of personal observations expressed in the author's happy con-

versational style, and also for the dependable quotations. Educators also are welcoming the book, and are ordering copies for use in the schools.

It is unfortunate that the book is not letter perfect. How much misstatement is due to "printers' conspiracy" perhaps those who have had things printed can tell.—HELEN S. PRATT, *Secretary, California Audubon Society, January 13, 1923.*

"A CHECK LIST OF THE BIRDS OF ILLINOIS"* BY BENJAMIN T. GAULT, has recently been brought out by the Illinois Audubon Society. As with previous publications of that Society, this list shows every evidence of care in its preparation. Mr. Gault's extensive knowledge of the birds of Illinois, acquired through many years of field work and observation, combined with painstaking accuracy in the preparation of his materials, has resulted in a most creditable publication, one that will be useful to bird students of the state.

The publication is a "Check List," a pocket manual, and, as such, condensed to the utmost; the necessity of such condensation forestalls any criticism of the system of symbols, otherwise rather irritating to the reader who has to master their meaning. Broad margins are left for any notations by those using the list.

An interesting feature is the map of Illinois showing life zones, by Robert Ridgway. Transition, Upper Austral, and three sections of Lower Austral are figured, divisions that have been noted by the reviewer with considerable interest. Some years ago the writer chanced to be doing field work in Will County, just within the area here considered as Transition. Red-bellied Woodpecker, Cardinal, and Mockingbird were nesting there, as well as some other southern species that we do not associate with the Transition zone; but, on the other hand, the Saw-whet Owl was there in summer, and a litter of Red Foxes was discovered. Zonal lines are hard to indicate in such a region; obviously they can not be given as definitely as in most sections of the west. There is probably no one who understands local conditions affecting animal life in Illinois better than Mr. Ridgway, and his map of the life zones of the state is certainly of value as expressing his opinion of the manner in which such divisions should be indicated in this part of the Mississippi Valley.—H. S. SWARTH, *Museum of Vertebrate Zoology, Berkeley, California, January 6, 1923.*

Since the above paragraphs went to press the reviewer has read Mr. Taverner's criticism of the same publication (Canadian Field-Naturalist, vol. 36, 1922, p. 179) with the utmost surprise at the severity of his strictures upon it. Some of his generalities are true enough, such as his objection to "the implied assumption that present day ornithological experts knew as much about birds in their youth as they do today", and the accompanying caution as to the acceptance of their early records; but these are not criticisms to be levelled at Mr. Gault's publication. This is a *pocket check list*, with information condensed to the utmost. There are more voluminous and more pretentious books (not dating so very far back, either) dealing with the same state and with surrounding territory (Kumlien and Hollister, The Birds of Wisconsin, 1903; Anderson, The Birds of Iowa, 1907; Woodruff, The Birds of the Chicago Area, 1907; Cory, The Birds of Illinois and Wisconsin, 1909), containing detailed information regarding the species questioned by Mr. Taverner. Those are the authors who should have sifted out the bad records from the reliable ones, and if they have failed to do so they are open to criticism to that extent. In the face of their acceptance of certain species the compiler of this condensed check list certainly could not omit those names without laying himself open to just as severe, and more deserved, criticism than that voiced by Mr. Taverner. The space at his disposal forbade discussion of doubtful points.

In connection with Mr. Taverner's objection to the sequence of species in the list of 200 common birds, beginning with the thrushes rather than the grebes, it is gratifying to learn that he feels that tinkering with the accepted system "is, to any one taking an active interest in modern ornithological literature, an exasperation rather than the assistance it is claimed to be." There are others who have felt the same way about certain other departures from current usage.—H. S. S.

*Check List of the Birds of Illinois, together with a short list of 200 commoner birds and Allen's Key to Birds' Nests. Published by the Illinois Audubon Society, 10 South La Salle Street, Chicago, 1922, 80 pp., 1 fig. (map).

PHILLIPS' NATURAL HISTORY OF THE DUCKS.*—With the publication of this work a new epoch in American ornithology dawns. This epoch is the counterpart of that which has held sway abroad, in England especially, for many decades, marked by the appearance of elaborate monographs of groups of birds covering the whole world. Of course the designation of a new American "epoch" thus characterized is purely a prophetic venture on my part, as reviewer. Having been bold enough to go this far, however, I may as well go a step farther and declare at once what is my bona fide conclusion after close scrutiny of volume I, namely, that Phillips' "Natural History of the Ducks" sets a new high standard of combined scholarly, literary, and artistic merit, in America.

Let me say frankly that when I started to examine this book, I was in a hypercritical attitude of mind. I wanted and rather expected to find serious faults in the book. For instance, I scanned some twelve pages for typographical errors, and errors in geography. When I found just one mistake, Alborni for Alberni (a place on Vancouver Island), on page 129, I began to "be impressed". For this is a wonderfully clean showing, as anyone so disposed can verify by critical attention to almost any current book or magazine. I have learned to give much weight to typography in arriving at an estimate as to the trustworthiness of an investigator's published output; as a rule, if he has been meticulously careful in proof-reading he has been meticulously careful also in assembling the facts he records and in making the generalizations he sets forth.

Examination of other features of Phillips' book tends to substantiate the favorable estimate just expressed. Taking the chapter on the Fulvous Tree Duck (pp. 128-139), which species I happen to know something about, as a probably fair sample of all the species treatments, I find that the literature has been exhaustively ransacked, that the known facts to date are all incorporated, that this information is logically classified, that there is a commendable degree of conciseness (there is no repetition or "padding"), and that the language used is sober —without any of the flamboyancy or extravagance of style which mars the scientific value of some recent books.

An especially useful feature to the serious student is the system of side-heads employed throughout each text account, by means of which the reader can quickly find the particular kind of information sought, for any one species, or, comparatively, for all the species in a given group.

While Volume I does not happen to deal with any North American species of "ducks" outside of the Tree-ducks, and hence on that score is not of so great local interest as future volumes promise to be, a very great deal of immediate value to Americans does appear in this volume, in the "Introduction" (pp. 3-40). Here are found terse discussions of general distribution of the ducks, of migration, of local movements (including the phenomenon of post-breeding dispersal, in some species irrespective of the cardinal points), of plumage (including the latest views on the complex question of molts in ducks), of special senses, of association of species, of courtship, etc.

While there is some concisely written and useful matter relative to the food value of species and upon local methods of hunting, the sportsman's point of view does not dominate the book, as it does in so many of the English works upon game birds. I will here quote some statements made by Phillips which illustrate his views on certain questions.

"After all, real sport is measured by its demand upon skill, patience, and woodcraft, and shooting baited ducks over a large flock of decoys, while seated in a comfortable box, to say nothing of a punter and a dog to chase the cripples, does not call for a very large measure of any of these qualities. . . . As a matter of fact any method by which ducks are stalked is far more sportsmanlike than where the birds are brought to the shooter" (p. 32).

"Many keen duck-shooters find themselves getting more and more sentimental as they grow older, and these are the men who originate all our worth-while reforms, not the type that has been brought up to look with holy horror upon guns and shooting-men" (p. 31).

"To sum up . . . [the estimates giv-

*A Natural History of | the Ducks | by | John C. Phillips | Associate Curator of Birds in the Museum | of Comparative Zoology at Harvard College | with plates in color and in black and white | from drawings by | Frank W. Benson, Allan Brooks | and | Louis Agassiz Fuertes | Volume I | *Plectropterinæ, Dendrocygninæ, Anatinæ* (in part) |[vignette] | Boston and New York | Houghton Mifflin Company | The Riverside Press Cambridge | 1922 [December ?]; 4to pp. xii+ 264, 18 pls., 27 maps.

en] serve to show us what enormous numbers of wild-fowl actually exist, and can continue to do so provided they have the proper places to live and breed in and are given reasonable protection. We must remember that they withstood the most persistent and destructive methods of hunting, such as the decoy systems of England and Holland, so long as their feeding grounds remained intact, but just as soon as these were reduced beyond a certain point, the numbers which were annually taken fell away rapidly" (p. 37).

Turning now to the illustrational features of the work in hand, I can simply say that, aside from the maps, they are admirable both from the standpoint of art and of ornithological delineation. Nearly all the colored drawings reproduced in this volume are from the brush of Fuertes and are, I believe, his "best yet". The processes of reproduction, by many impressions on a high-grade, non-glazed paper, have brought remarkably satisfactory and lasting results. As to the maps, however, the mechanical style in which they are handled does not appeal to me. Much more delicate lines could have been employed, and each map could have been run in the text on distribution (instead of on one side of a whole separate sheet).

The one, and outstanding, drawback to Phillips' "Natural History of the Ducks" is its expensiveness—fifty dollars per volume, I hear. This puts it out of reach of practically all beginning bird students, just those who should profit by having high standards of ornithological literature before them, and probably beyond the reach of a large proportion of advanced students as well. Furthermore, the size of the edition, I understand, is just 400 copies, this small number prescribing a deplorable limitation in distribution.

I wonder if it might not have been possible to issue a special edition *minus* the plates, and on inexpensive paper, so that the text alone would have been available widely to students. After all, does not the kernel of ornithological record lie in *text*, rather than in illustration? Carefully couched descriptions and statements can take the place in large measure of even the best type of illustration. From a strictly scientific point of view, when the factor of expense must be weighed, text is more to be desired than pictures, and the latter must in extremity be dispensed with altogether.

Finally, be it known, the enthusiastic approval of Phillips' "Natural History of the Ducks" here expressed has not been induced by the receipt of a complimentary copy "for the favor of review"! None has been received, nor is one expected. The copy we have studied was loaned us by a fortunate friend.—J. GRINNELL, *Museum of Vertebrate Zoology, Berkeley, February 18, 1923.*

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

DECEMBER.—The regular meeting of the Northern Division of the Cooper Ornithological Club was held at the Museum of Vertebrate Zoology, Berkeley, December 28, 1922, at 8 P. M. President Swarth was in the chair with the following in attendance: Mesdames Allen, Delport, Calvert Mead, and Schlesinger; the Misses Burk and Flinn; Messrs. Bryant, Bunker, Carriger, Cooper, Evermann, Gignoux, Grinnell, Hudson, Labarthe, LaJeunesse, Mailliard, Miller, Storer, Tyler, and Wright. Among the visitors present were Mrs. Cooper, Mrs. Swarth, Mr. Labarthe, Jr., and Mr. Wilson.

The minutes of the November meeting of the Northern Division were read and approved followed by the reading of the minutes of the Southern Division for November. Mr. and Mrs. H. C. Cantelow were proposed for membership by Mrs. J. T. Allen, and Miss Susan T. Mackey, Cloyne Court, Berkeley, by Mrs. Edwin Mead. Dr. Evermann reported for the committee appointed to consider the Public Shooting Grounds Bill that no more definite information had been obtained as yet through correspondence with headquarters at Washington. He offered the motion that the club give approval to the bill as adopted by the Fish and Game Commission of California. His motion was seconded by Mr. Wright. An amendment was offered by Dr. Grinnell, striking out the amendments proposed by the Fish and Game Commission. This amendment was duly seconded but lost. Mr. Storer then offered an amendment that the club approve the bill except the clause which permits the owner of property to hunt on his own premises without a hunter's license. The amendment was accepted by the original movers and was carried.

Nominations for officers for the coming year were then called for. Mr. Cooper was nominated for president by Evermann, seconded by Grinnell; Mr. Cooper nominated

Mr. Swarth, but there was no second and the nominations were closed. Mr. Dixon was nominated for vice-president by Mailliard, seconded by Wright. Nominations were closed. Mrs. Allen was nominated for secretary by Miller, seconded by Wright. Nominations were closed.

Business completed, the club listened to a very interesting talk by Mr. Swarth on the Birds of San Francisco Mountain, Arizona.

Adjourned.—AMELIA S. ALLEN, *Secretary.*

JANUARY.—With about sixty members present, a short business meeting of the Northern Division of the Cooper Ornithological Club was held at the Museum of Vertebrate Zoology at the close of the preview of Mr. Donald R. Dickey's motion pictures on the evening of January 25, 1923.

The minutes of the December meeting of the Northern Division were read and approved, followed by the reading of those of the Southern Division. Mr. Granville E. Thomas, 1533 Spruce St., Berkeley, was proposed for membership by Mr. Paul F. Bunker, and Miss M. Pamelia Clough, 844 Arlington Road, Berkeley, by Mrs. J. T. Allen.

A communication from Representative Julius Kahn promising to give careful consideration to the recommendation of the club when the Public Shooting Grounds Bill, H. R. 5825, comes up in the House was read by the secretary.

On motion of Dr. Bryant, duly seconded, the Secretary was instructed to cast the ballot for the officers nominated at the December meeting. Business completed the club adjourned to give the members an opportunity to meet Mr. Dickey and Major Brooks.—AMELIA S. ALLEN, *Secretary.*

SOUTHERN DIVISION

NOVEMBER.—The regular monthly meeting of the Southern Division, Cooper Ornithological Club, was held the evening of the 30th at the Los Angeles Museum. Mr. Law was acclaimed chairman of the evening. Members present were: Misses Brown, Burnell, and Potter; Mrs. Law; Messrs. Allen, Barnes, Bishop, Cantwell, Chambers, Colburn, Cookman, Hill, Lamb, Law, Mailliard, Miller, Reis, van Rossem, and Wyman. Visitors were: Mesdames Bishop, Cookman, Hill, van Rossem, and Wyman.

Minutes of October meeting were read and approved. Proposals for membership were: Edwin R. Kalmbach, Biological Survey, Washington, D. C., by A. Wetmore; Levi A. Giddings, 437 Douglas Ave., Salt Lake City, Utah, by John Sugden; and from the Northern Division, Carl P. Russell, Reno, Nevada.

On motion of Dr. Miller, the members voted unanimously to add the name of G. Frean Morcom to the honorary list.

The question of holding meetings at the Southwest Museum was brought up, and on motion of Mr. van Rossem, amended by Dr. Miller, it was voted to hold three meetings yearly at that Museum, dates to be determined by the Entertainment Committee.

A letter was read from the head of the City Library, promising efforts to provide better accomodations for bird study.

Mr. Mailliard spoke briefly on the activities of the California Academy of Sciences, after which Mr. van Rossem gave an interesting talk on "Plumage Changes of the Black Tern."

Adjourned.—L. E. WYMAN, *Secretary.*

DECEMBER.—The regular meeting of the Southern Division of the Cooper Ornithological Club was held at the Los Angeles Museum on the 28th at 8 P. M. Members present were: Mesdames Anthony, Schneider, and Warmer; Misses Burnell, Palmer, and Pratt; Messrs. Appleton, Bishop, Bryan, Chambers, Cookman, Lamb, Lelande, Little, Miller, Pierce, Reis, Rich, Warmer, Wood, and Wyman. Visitors were Mrs. Bishop, Mrs. Cookman, Miss Creager, and Miss Preisman.

Minutes of the November meeting were read and approved, and those from the Northern Division for October and November were read. Alden Holmes Miller, 6066 Hayes Ave., Los Angeles, was proposed for membership by L. H. Miller; and the Northern Division sent the names of Mrs. Mary E. Delport and Miss Susan E. Beaman.

Dr. Warmer moved that a committee of three be appointed to draft resolutions on the death of Mr. Millard; seconded by Mr. Miller and carried, whereupon President Rich appointed Messrs. Law, Chambers, and Bishop.

On motion of Dr. Miller that a committee be appointed to select candidates for the coming election, the chair named Messrs. Miller, Chambers, and Lamb.

The paper of the evening was by Dr. Miller, who ably presented the subject, "The Study of Fossil Birds."

The following half-hour of informal discussion developed some unusually interesting observations on birds.

Adjourned.—L. E. WYMAN, *Secretary.*

For Sale, Exchange and Want Column.— Any Cooper Club member is entitled to one advertising notice in each issue free. Notices of over ten lines will be charged for at the rate of 15 cents per line. For this department, address W. LEE CHAMBERS, *Altadena, Los Los Angeles County, California.*

COSTA RICA BIRD SKINS—There is a growing interest being shown by institutions and individuals in the extralimital species of the genera enumerated in the A. O. U. *Check-List.* I can furnish many of the Costa Rican forms.—AUSTIN SMITH, *Apartado 412, San Jose, Costa Rica.*

MOLLUSKS WANTED—Would like to hear from Ornithologists and Oologists expecting to make extended collecting trips to distant places. My interest centers on mollusks which can be secured at odd times or while collecting. If you would care to collect the shells thus found make your proposition to RALPH W. JACKSON, *Route No. 1, Cambridge, Maryland.*

PHILIPPINE BIRDS FOR BOYS AND GIRLS—by McGregor and Marshall, can be purchased from the American agents, CONGDON AND CROME, *230 University Avenue, Palo Alto, California.* The price is $1.50.

FOR SALE—Auk, vols. 8-32, in parts as issued, $55.00; Coues, Ornithological Bibliography, all four parts, cloth bound, $14.00; Owen, Comparative Anatomy of Vertebrates, 3 vols., cloth, $9.00.—H. GUNTHORP, *Univ. of Washington, Seattle, Wash.*

FOR EXCHANGE—Sets of eggs, bird publications and mammal skins, for sets of Raptores. Desire to purchase a set of Bendire's Life Histories, preferably bound. State fully in first letter. Address: RALPH W. JACKSON, *Route No. 1, Cambridge, Maryland.*

GEORGE G. CANTWELL has moved and is now located at 7287 *Keystone Ave., Palms, Calif.*

WANTED—N. A. Fauna nos. 23 and 27.—LUTHER LITTLE, *1403 Garfield Ave., South Pasadena, Calif.*

FOR EXCHANGE—For eggs or bird skins: A few rare Arctic birds such as King, Steller, Spectacled and Pacific Eider; Yellow-billed, Pacific and Red-throated loons; Pomarine, Parasitic and Long-tailed jaegers; Glaucous, Sabine, Short-billed, Ivory gulls, shore birds, etc. These are all choice specimens, suitable for mounting.—ALFRED M. BAILEY, *Colo. Museum Nat. Hist., Denver, Colo.*

FOR SALE—The Library of Dr. William C. Braislin is to be auctioned off by the "Anderson Galleries" some time in late March. Any one wishing to turn in bids please write: THE ANDERSON GALLERIES, *Park Ave.* and *Fifty-ninth St., New York City.*

WANTED—A copy of Bulletin 107, U. S. National Museum.—J. LABARTHE, *2727 Russell St., Berkeley, Calif.*

WANTED—N. A. Fauna 23, 25, 28. A. O. U. Check-List, 3rd edition; Scammon's Marine Mammals. Send your lists as I am buying anything new to my library.—LAURENCE M. HUEY, *Natural History Museum, Balboa Park, San Diego, Calif.*

FOR EXCHANGE—Ridgway's Birds of North and Middle America, vols. 5, 6, 7 and 8, new as issued; Fisher's Hawks and Owls. Want Bendire's Life Histories, vols. 1 and 2; Bent's Life Histories, all except 107; N. A. Fauna, 19, 25, 27, 28; Nidiologist, vol. 1, nos. 2, 4, 5 and 6; Osprey, vol. 1, nos. 2 and 4; vol. 3, nos. 8 and 10; and vols. 4 and 5 complete.—CHAS. W. TINDALL, *Independence, Mo.*

FOR SALE AND EXCHANGE—After two years and a half in storage I have now unpacked all my collections and my library. There are many duplicate books and pamphlets, and a large list of bird and mammal skins from this section. I especially want sets of Jays, Raptores and Finches.—HAROLD H. BAILEY, *Miami Beach Zoological Park and Museum, Miami Beach, Florida.*
